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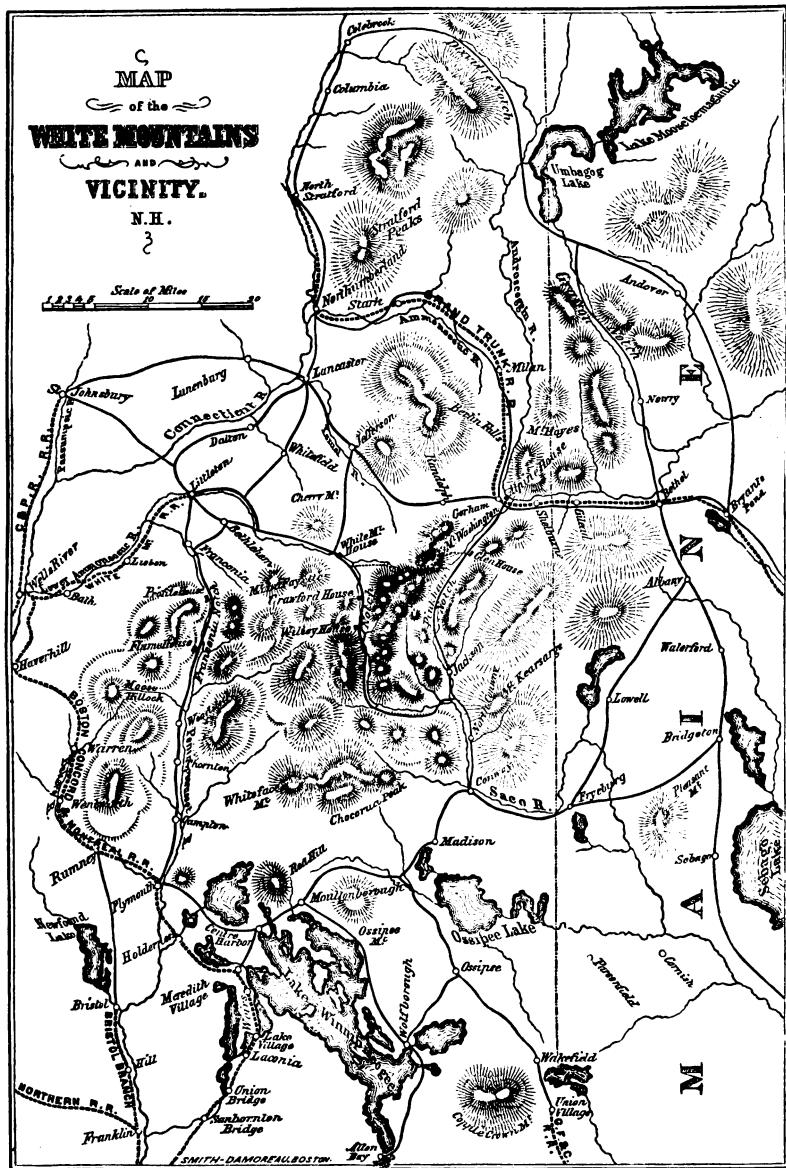
Rev. H. P. Walcott

with the kindest regards of his
friend M. Wymen.

Cambridge Sept 3 1876

AUTUMNAL CATARRH.

AUTUMNAL CATARRH.



The uncolored space represents those parts believed to be safe from Catarrh.

AUTUMNAL CATARRH

(HAY FEVER)

WITH ILLUSTRATIVE MAPS

BY

MORRILL WYMAN, M. D.

LATE HERSEY PROFESSOR ADJUNCT OF THE THEORY AND PRACTICE OF MEDICINE
IN HARVARD UNIVERSITY, ETC., ETC.



**The Francis A. Countway
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To

JEFFRIES WYMAN, M. D.,

PROFESSOR OF ANATOMY IN HARVARD UNIVERSITY, ETC., ETC.,

THIS ESSAY

IS AFFECTIONATELY INSCRIBED.

"In writing the history of a disease, every philosophical hypothesis whatsoever, that has previously occupied the mind of the author, should lie in abeyance. This being done, the clear and natural phenomena should be noted—these, and these only."

SYDENHAM, Vol. I. p. 14, Sydenham Society's Edition.

ONE of the most interesting questions connected with Autumnal Catarrh is its geographical distribution. Much valuable information has already been received from individuals and from the United States Hay Féver Association, for which I would express my thanks. More facts bearing upon this point, especially as to its existence in the Southern and Western States, are much desired. I shall be under obligation to any one who will take the trouble to send them to me, care being taken to distinguish between the "Rose" or "June Cold" and the Autumnal Catarrh of September. To Professor Arnold Guyot of Princeton, and Messrs. Scribner, Armstrong, & Co., I am indebted for the use of his excellent physical maps of New England and the United States, upon which to lay down the catarrhal regions as at present known; also to the publishers of T. Starr King's "White Hills," for similar facilities as to the White Mountain regions.

CAMBRIDGE, *August*, 1876.

M. W.

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AUTUMNAL CATARRH

INTRODUCTION.

§ 1. IN the northern part of the United States of America there are two distinct forms of annually appearing catarrh, — one known as the “Rose Cold,” or “June Cold,” commencing during the last week in May or the first week in June, and continuing until about the first week in July. This corresponds in most of its symptoms and in the time of attack with that popularly known in England as “Hay Fever,” or “Hay Asthma.”

Hay Fever, as it exists in England, was first described by Dr. John Bostock, in 1819, in the tenth and fourteenth volumes of the “Medico-Chirurgical Transactions,” under the name of *Catarrhus Aestivus*.¹ He had collected twenty-eight cases, ten of them “less correctly ascertained,” from which, and from his own personal sufferings, he drew his description of the disease. Since then, numerous treatises, more or less complete, have been published in England, France, Germany, and Switzerland.

Dr. Phoebus, of Giessen,² has collected the cases de-

¹ John Bostock, “*Catarrhus Aestivus*,” or “Summer Catarrh;” *Medico-Chirurgical Transactions*, vol. x. p. 161, and vol. xiv. p. 437.

² *Der Typische Frühsommer-Katarrh oder das sogenannte Heufieber, Heu-Asthma*, von Philip Phoebus, Giessen, 1862.

The Typical Early Summer Catarrh, or the so-called Hay Fever, Hay Asthma, by Philip Phoebus, Giessen, 1862.

scribed in these treatises, of which he has given the titles of thirty, and, by means of circulars addressed to various physicians, obtained much other information. From these materials, without apparently having treated or personally investigated the disease in his own practice, he has drawn up the most systematic work upon the subject which has yet appeared. Mr. Charles H. Blackley, of Manchester, England, has made many ingenious and careful investigations as to the effect of pollen as a cause of "Hay Fever," *Catarrhus Aestivus*, in that country, and concludes that it is to be found *exclusively* in the pollen of certain grasses and cereals.¹

Although this disease in the time of its access, its duration, and in most of its symptoms, resembles that which exists in the United States, we are not aware of any certain evidence of the identity of the two diseases, at least so far as the causes are concerned. Nor do we know of any persons who, having suffered from an annual catarrh here in June, have suffered in other years from a similar disease at the same season in England. On the other hand, we have known those who, having suffered here in June, have subsequently been in England or on the Continent during the same month and entirely escaped any similar disease. Two cases of the June Catarrh as occurring here will be described farther on as a means of comparison.

The other form, which is the subject of this Essay, occurs in autumn, has heretofore attracted very little attention, and, it is believed, has been pretty generally, both by sufferers and physicians, confounded with ordi-

¹ If this were the proper place, we think it would not be difficult to show from numerous facts given in Mr. Blackley's book, that other causes, sometimes with and sometimes without pollen, may have an influence; the bean-flower, for instance, is so constructed that the pollen is shut up in a close box, from which it is obtained only by insects, and is not blown about; double roses are without pollen, and yet both plants are cited as powerful causes of "Hay Fever."

nary occasional catarrh, or with the "Hay Cold," or "June Cold" just mentioned.

In examining the work of Dr. Phoebus, it will be seen that one case, contributed by the late Dr. George Hayward of Boston, is considered by Dr. Phoebus as differing from the others in his collection, and is therefore rejected from his list. Further inquiries have satisfied me that this case belongs to the second form.

§ 2. I have long been a sufferer from this last disease, but have never yet met with a description of it in any medical work. In 1854 it was described by me in my course of lectures in the Medical School of Harvard University; the description being drawn from my personal experience, and a few cases which had come under my observation for treatment. This, so far as I know, is the first published description of the affection.

In May, 1866, the facts then known to me were embodied in a paper read at the annual meeting of the Massachusetts Medical Society in Boston.¹ Subsequently I

¹ The following abstract was published in the *Boston Journal*, June 2, 1866:—

AUTUMNAL CATARRH.—At the meeting of the Massachusetts Medical Society, Dr. Wyman of Cambridge gave an account of a singular catarrhal affection, or cold, hitherto undescribed, and named by him Autumnal Catarrh. There are two annually appearing catarrhs in this country: the summer catarrh (commonly called Rose Cold, Hay Fever, or June Cold) begins the last week in May or the first week in June, and lasts four or five weeks; the other, the Autumnal Catarrh, commences the last week in August, and continues till the last week in September. It begins with sneezing, itching of the eyes, especially at the inner corners, watering of the eyes, and a profuse discharge from the nostrils. The affection of the eyes is in fits, coming on suddenly, compelling the sufferer to rub his eyes violently for relief. The fits of sneezing and nose-blowing and obstruction of the nostrils are also sudden, and when the fit is over, usually in a few minutes, go off as quick as they came. During the second week in September, a cough sets in, dry, violent, and in fits; it is increased by dry, dusty weather, and relieved by an easterly storm. It is most severe in the night, and there is sometimes asthma. The disease subsides during the third week in September, and by the first of October, or the first good frost, is entirely gone. It is not an uncommon disease; Daniel Webster

made more exact inquiries of physicians and others. Of the physicians to whom application was made, very few had met with or ever heard of the disease, and doubted its existence except as an ordinary catarrh. Three physicians, however, had cases occurring either in their own persons or families, from whom careful histories were obtained. But by far the greater part of my knowledge is derived from a personal examination of those who are subjects of the disease, the description being written down and carefully corrected in their presence. A few cases have been communicated by letter, generally containing a full account of the symptoms, with the effects of place, season, and other physical influences.

Several illustrative cases are given in full, and one hundred are collected in a Tabular View at the end of the volume. This contains the principal symptoms in groups. First, those of the head, nose, eyes, ears, and throat. Second, those of the chest, cough, difficulty of breathing, and condition of the heart; the severity, in each case, being indicated. To these are added the time of beginning and end of the annual attack, and the influence of locality. Many other cases have come to my knowledge, containing many important facts, which will be given in full. The number in the Tabular View is sufficient for my purpose.

The cases collected and the completeness of the histories, derived as they are from various parts of the

had it annually for twenty years, and while Secretary of State suggested to President Fillmore the propriety of resigning on account of it. The late Chief Justice Shaw of Massachusetts was another victim. Medicines seem to have been most freely tried without materially relieving its severity or shortening its duration. Fortunately, it has been ascertained that there is a most complete and agreeable cure. Within twenty-four hours after the sufferer arrives at the White Mountains, at Gorham, at the Glen House, or the Waumbee, it suddenly disappears, and if he remains till the last week in September, the usual time of disappearance, does not return for that year. The relief at Franconia is not so certain as at the north side of the mountains, though most are relieved there also.

United States, especially the northern section, and comprising the most common forms of the affection, will warrant me in giving a general description which shows, I think, that the disease differs from any heretofore described.

§ 3. To this disease I propose to give the name of *Catarrhus Autumnalis* or *Autumnal Catarrh*, in conformity with the nomenclature of Dr. Bostock, and because it involves no theory as to its cause, of which very little is certainly known.

The popular name, "Hay Fever," is objectionable. It was first used by Dr. Bostock about 1824, to designate the English disease. In this country it has been applied to the "June Cold" or "Rose Cold." Applied to the autumnal disease it is certainly inappropriate, if it is intended thereby to indicate that it is caused in any way by hay. The hay in New England has generally been cut and carried a month before the appearance of the catarrh, and it is only in exceptional cases that the smell of hay, or its dust, any more than any other dust, produces uncomfortable sensations in the subjects of this disease.

"Hay Asthma," another popular name, indicates that difficult breathing is the main symptom. But this it certainly is not. The affections of the eyes and nose are more frequent and more constant than difficulty in breathing. If it is intended to indicate the cause, it is as objectionable as "Hay Fever."

Bronchitis has been proposed, but this implies, first, that it is an inflammation, and secondly, that its principal seat is in the air tubes. That it is an ordinary inflammation of the mucous surfaces can hardly be maintained, neither is its principal seat in the air tubes. This term, therefore, is objectionable.

The term *Catarrh*, on the other hand, indicates a condition of the mucous membrane, which is accompanied

by a flow of a thin secretion ; it does not necessarily imply inflammation ; this condition is what we find in the disease before us ; it is, indeed, the most prominent symptom.

Objection may be made to the word Autumnal, inas-much as the astronomical autumn does not commence till about the 22d of September, at which time the disease has nearly finished its course. But popularly in the United States, the three autumnal months are September, October, and November ; in England, August is reckoned as the first month of autumn.

The name, Autumnal Catarrh, here adopted, seems, therefore, to be as little objectionable as any which has been proposed. It indicates two important facts connected with the disease, — its time of appearance and its character, — and presents no theory.

My investigations have necessarily been made, in a great measure, in New England. Care has been taken, however, to obtain as much information as possible with regard to the disease in the Southern and Western States, from sufferers who have been there during the critical period. The disease requires further investigation, and it is to be hoped that it will be made in these directions. I now proceed to the general history.

GENERAL HISTORY.

§ 4. MY principal object in this Essay is to give as accurately as may be the *Natural History* of this singular disease ; its origin, course, and termination ; its relation to seasons and places ; and the influence of various physical agents either in producing it as a whole or in exciting paroxysms of suffering.

An outline or general history will be given in this section ; the symptoms in detail, with cases, will be found farther on.

Discussions and speculations as to the cause of this disease would be out of place here. They can be profitably entered into, if at all, only after a careful study of a large number of truly reported cases. Generalizations are but conclusions from particular facts, as Locke has long since invincibly established.

All the cases agree in the time of annual return, about the 20th of August, varying but a few days from this date in different years. By some individuals it is believed to be remarkably punctual, being first noticed on precisely the same day of the month, and, it is even asserted, at the same hour of the day.

It is first perceived as a slight itching in the palate and in the parts about the roof of the mouth, soon followed by similar sensations, apparently in the eustachian tube, extending from the throat into the ears, and inducing the sufferer to attempt relief by swallowing, and rubbing his tongue against the back part of the hard palate, and by pressing and rubbing the external orifice of the ear to give motion to the parts within.

There is often a sense of tension about the forehead, especially over the eyes in the region of the frontal sinuses.

In a day or two the nostrils are affected ; there is irritation of the lining membrane, sneezing, and a stuffing and obstruction of the nostrils. This obstruction is peculiar ; it occurs in paroxysms of short duration, one or both nostrils becoming suddenly obstructed, and in two or three minutes as suddenly relieved ; at other times the obstruction is more prolonged. But, however complete, it is, in many individuals, almost immediately relieved by active exercise, rapid walking, leaping, or any movement, indeed, which gives warmth to the extremities.

At first these attacks occur only in the morning or on first rising ; as the disease advances they occur later in the day, but still in short paroxysms.

At this stage the discharge from the nostrils is limpid and almost free from mucus ; it is often very copious, especially during or immediately following attacks of sneezing. Holding down the head is often accompanied by a rapid dropping of the same fluid without sneezing.

With this trouble in the nostrils comes watering of the eyes and itching along the edge of the lids and in the conjunctiva generally, but most at the inner corners. This irritation is also in paroxysms of a few minutes' duration. It is so intense that it is difficult for the sufferer to refrain from rubbing the eyeballs violently, — which soon relieves them, notwithstanding that such treatment increases the turgidity of the vessels until the whole conjunctival surface sometimes becomes of a nearly uniform red. The eyelids are swollen, their edges red and inflamed ; the small glands are also inflamed, and in some cases pustules or sties form and break, leaving an excoriated surface which heals slowly. The whole face is often red and swollen, especially in the morning.

The senses of taste and smell are much impaired, in

some cases almost abolished, and at times there is partial deafness with a sense of obstruction of the internal ear. The lining membrane of the external tube is sometimes much irritated, even to the extent of producing a thin discharge, without evidence of the irritation extending to the tissue beneath.

Swallowing is interfered with, especially when the nostrils are so obstructed as to prevent the perfect motion of the parts necessary to this act. The lining membrane of the mouth, tonsils, and pharynx partakes of the general irritation, and becomes red ; and sometimes there is soreness of the throat. The lips become dry, cracked, and swollen.

The skin is easily irritated and excoriated, and the excoriations are not as readily healed as in health. Many also suffer from itching of the skin, especially of the scalp, back, and chest, at times accompanied by a slight papular eruption.

During some portion of this period there is chilliness, or rather sensitiveness to cold ; more or less pain, or sense of oppression in the head ; the appetite diminishes ; there is lassitude and weakness. The pulse is accelerated and weakened, the skin hot and dry, with other signs of a febrile movement.

Towards the end of the second week, to these symptoms is added irritation of the membrane lining the air tubes ; a frequent and dry cough, commencing with a sense of tickling in the upper part of the windpipe, but little relieved by the cough, or only after long coughing, and the expectoration of a small quantity of transparent glairy mucus. The severity of these bronchial symptoms depends much upon the condition of the atmosphere ; if dry and dusty, the cough is much worse ; dampness and a rain-storm give relief. During the third week the affection of the lungs gradually increases ; the cough, still with very little expectoration, is more trouble-

some, especially in the night, sometimes compelling the patient to spend an hour or two sitting up, and not unfrequently is spasmodic in its character, producing convulsive retching or even vomiting.

The disease may now be assumed to be at its height. It is this stage also that in some cases asthmatic symptoms appear; and although they are sometimes severe, are not usually long continued.

At the end of the third week the catarrhal symptoms diminish, the tickling of the fauces ceases, the eyes and nose improve; but the cough is apt to continue longer, and the heart's action is easily accelerated by exercise, and the pulse is sometimes intermitting. The skin is dry, and warmer than natural.

During the fourth week in September these symptoms gradually diminish, and by the end of September, or the first frost, are nearly gone, leaving weakness, and a more or less altered state of the mucous membrane of the air tubes, the effect of the prolonged irritation, from which the patient (if otherwise in good health) generally soon recovers.

§ 5. Such is the usual course of the disease. All the symptoms are seldom present in the same individual. The symptoms connected with the head; the itching of the eyes, ears, nose, and fauces varies in severity, but is never wanting. The cough, although variable in severity, occurs in most. The asthma is the least frequent, but, when present, is sometimes severe. In some there is a daily paroxysm of fever, accompanied by headache, intolerance of light, and debility, compelling the patient to keep his room, or even his bed, for several days in succession. It varies somewhat in severity in different years; enough to encourage sanguine individuals in the belief that their last new remedy is at length effectual. The tendency of this annually repeated affection of the mucous membrane is to prolong the disease into cold

weather, and, in some rare instances, to bring about a permanent chronic bronchitis, gradually undermining the health. In some individuals, again, the action of the heart is more or less interfered with, which may have had an influence in some of the cases recorded, in shortening life, or determining the kind of death.

LOCAL SYMPTOMS.

THE NOSE.

§ 6. THE lining membrane of the nostrils is the part first affected; beginning with a slight tickling or itching, which soon shoots upward towards the eyes, and even into them. These sensations gradually increase as the parts become more irritated, and are accompanied by a slight moisture of the nostrils.

In a short time sneezing commences of a most extraordinary kind.¹ The sneeze is seldom single; generally

¹ In the following notes the number of the case has reference to the Table of Cases at the end of the volume. In this table certain characteristics or noteworthy observations are inserted which give a general history of the individual case to which these notes are additions, and also proofs of the statements in the text.

The expressions of those who have favored me with an account of their cases are given as nearly as possible. This has been done because it is to be presumed that these expressions as a general rule convey the facts most correctly, and because any undue influence from my own views as to the cause and nature of the disease is thereby avoided.

Many persons doubt whether a disease like that which is the subject of this Essay, really exists; they consider it an ordinary cold, such as might occur at any season of the year. A full detail of the symptoms from sources beyond question and in sufficient number, will be likely to remove this doubt.

Case 2. Rev. H. W. Beecher. — "My nose is exquisitely sensitive, and subject to incessant and copious defluctions. The slightest draft of air produces sneezing of the most enterprising character. To sneeze in tens and twenties, with repeats *ad libitum*, is part of my daily duty. The odor of flowers, smoke, and cinders in cars, dust, perfume, or anything ordinarily without disagreeable effects, now produce sneezing and a copious secretion of thin watery mucus. After about ten days the secretions become thicker."

The same writer in the *New York Ledger* thus graphically describes his sufferings: "The nose sympathizes. Your handkerchief suddenly be-

several follow in quick succession; they are violent and effective. These paroxysms are excited by a great variety of conditions. Dust, especially that accompanied by smoke, as in a railway train, is particularly provocative of sneezes. The dust of a carpet, or from the street, are also efficient. A slight draft of air, hardly observable at the time; the change from shade to sunshine, or even the change of the body from the sitting to the upright position, will be followed by a succession of these annoyances.

Strangely enough, however violent and irrepressible the sneezing may be, the influence of mental activity or strong emotion in controlling it is pretty decided. Whatever the tendency to sneezing, I have never known it to attack a clergyman or other public speaker when before his audience.¹

The sneezing is accompanied by a greater or less discharge from the nostrils. In the early stages, this dis-

comes the most important object in life. By the next day the slightest draft of wind sets you to sneezing. It is a revelation. You never before even suspected what it was really to sneeze. If the door is open, you sneeze. If a pane of glass is gone, you sneeze. If you look into the sunshine, you sneeze. If a little dust rises from the carpet, or the odor of flowers is wafted to you, or smell of smoke, you incontinently sneeze. If you sneeze once you sneeze twenty times. It is a riot of sneezes. First, a single one like a leader in a flock of sheep, bolts over; and then, in spite of all you can do, the whole flock, fifty by count, come dashing over, in twos, in fives, in bunches of twenty."

Case 22. Samuel Batchelder, Esq. — "These attacks commence after the heats of summer, near the last of August, giving the impression that they are a consequence of the debility occasioned by these heats. The most prominent symptom, nasal catarrh, is manifestly increased by exposure to the dust; sometimes a slight change of temperature, either from heat to cold or from cold to heat, will produce rapid and violent sneezing. Attacks of sneezing are brought on by changing from shade to sunshine, or smelling of the milk-weed [*Asclepias cornuti*]. Sitting quietly in my office the troublesome symptoms are quiet, but getting up and moving about or going into the street, will produce a paroxysm."

¹ Rev. J. H. W. writes: "I have never had a sneeze in the pulpit, though plenty before and after service."

charge is a perfectly limpid water. The quantity is often excessive, requiring in some cases the use of two or three dozen handkerchiefs daily, and yet so clear as hardly to leave a stain.¹ If the head be held down so that the blood in it is in any degree increased, the flow is augmented, and drops follow in quick succession.

The nostrils are soon obstructed by the great and sudden swelling of the sub mucous cellular tissue, the nervous plexus of which and the erectile tissue beneath undergo the sudden changes peculiar to them.

After a paroxysm of sneezing, and a flow of water from the nostrils, they become less obstructed, and sometimes quite free, and so remain for an hour or more.

These attacks are produced by the irritative causes above described; but there are also certain hours at which they are naturally most severe. The most common time for a severe fit is the early morning on first rising, when the position of the body is changed, and at the same time is exposed to a different temperature. Individuals have named certain hours of the day and night when these regular paroxysms occur, and from which they vary but little. With others, they come on suddenly, irregularly, and without obvious cause.² They are

¹ Case 66. — "The flow from the nostrils is so profuse that three dozen handkerchiefs are used daily. There is fever, a hot dry skin, dry mouth, eyes red and watering, which continues till frost. In a week or ten days from the commencement, a cough comes on which continues till winter. She is obliged frequently to sit up at night with obstructed nostrils and asthma."

Case 36. Henry G. Fay, Esq. — "August 20th I began to sneeze and have the watery discharges from the head. This discharge commences lightly, but before the close of the season it often saturates six or eight handkerchiefs *per diem*. This water has no color; a handkerchief may be 'sopping wet' and yet look clean. Sometimes when I stoop over with my head towards the floor, the discharge will run out of my nose like water from a pitcher almost."

² Case 15. Edward Wyman, Esq. — "The sneezing paroxysms are most severe between 11 o'clock and 12 o'clock at noon, and are accompanied by a sense of tension over the eyes. The disease is apparently more severe on alternate days."

not to be resisted or put off, like ordinary sneezing, by pressing upon the nose at its root, or other devices; they seem to have other and more powerful incentives than occur in any ordinary cold in the head.

Another and not less striking characteristic is the suddenness with which they come upon the sufferer, and equal suddenness with which the whole attack disappears; they come and go off, when they do go, in a moment.

The obstruction of the nostrils is variable, and in the early stages (at times) it ceases entirely; but as the disease advances it is more complete, more constant, and at night becomes very annoying. The nostrils may be entirely closed at the same time that the flow from them continues. This state of things compels breathing through the mouth, which makes the tongue dry and hard; and the dryness and hardness not unfrequently extend to the throat, and the sleeper is aroused with a stiffness in these parts, producing a sense of suffocation.

The act of swallowing is interfered with, not only by the obstruction of the nostrils, which prevents the proper application of the palate to the posterior nares, but also, it would seem, by some nervous disturbance, by which the proper consent of action among the muscles is prevented. This is most frequently noticed in the morning at breakfast.¹ Still, however great this trouble may be,

¹ *Case 1.* — "My attack begins August 20th, or within a day or two of that date, with a slight stuffing of the nostrils, and in a week I begin to sneeze in paroxysms, principally in the morning on first getting up, so that sometimes it takes me more than an hour to get into condition to permit of my attempting to eat. I am also subject to paroxysms in the evening, apparently caused by the night air, and sometimes at other hours in the day. By a fortnight my eyes are greatly inflamed and my throat very sore. These symptoms continue about a fortnight, with very little abatement. Then the bronchial tubes and lungs begin to be affected, and the symptoms in the head grow less severe."

Case 10. — The obstruction of the nostrils is usually greatest on first rising or soon after, and also after a nap during the day. In the morning it frequently goes to the extent of interfering with the act of degluti-

it can generally be relieved for the time by muscular exercise,—running up-stairs, leaping, or anything that warms the extremities and promotes perspiration. By this means the obstruction of the nostrils is removed, and a large part of the difficulty at once ceases. The senses of taste and smell are generally much impaired, and sometimes lost.¹

tion, and the movements of the uvula, producing a general disturbance in the coördination of the muscles engaged in this act, often to the extent of preventing the morsel from being swallowed, and endangering choking."

Case 62. — "The obstruction of the nostrils is much relieved by exercise or going up-stairs."

G. B. Ayres, Esq. — "I always feel most comfortable immediately after meals, although while partaking of them I have the utmost difficulty in breathing. It is simply a strangulatory process—a contest between air and victuals for the occupancy of my throat—and I am always glad when it is over."

¹ Case 10. — The sense of smell is very soon diminished, and, before the end of the first week of the disease, is, in many cases, abolished, especially during the obstructed condition of the nostrils. See, also, Case 18. The sense of taste is diminished early in the disease, and the mouth becomes dry and sticky.

W. H. Lowe, Providence, R. I. — Loses senses of taste and smell, and finds his hearing impaired and swallowing interfered with.

Mr. J. H. W. — "Taste suffers, but smell remains acute to the end, and if anything increasingly so."

Morrill Wyman, Jr. — *Sept.* 21, 1875. Early in the morning, after an attack of nose-blowing and free discharge from nostrils, the lining membrane covering the turbinated bones was of a pale red, watery look, swollen—nearly obstructing the whole passage—looking much like a polypus, and pouring out freely a limpid fluid. The uvula is swollen and pale, the velum also swollen and somewhat redder than the uvula. He has been at the White Mountains, and returned on the 18th—three days ago.

Dr. Cutter of Cambridge kindly examined my nostrils during the attack. The lining membrane of the nostrils was swollen and of a dark red color.

Case 15. Edward Wyman, Esq. — "The nostrils become completely obstructed; usually one at a time, but sometimes both at once, which materially interferes with deglutition. Smell and taste are then both lost."

Case 22. — "The sense of smell of late has much diminished, but the sense of taste is pretty good."

E. M. Smith, Esq., Rochester, N. Y. — The attacks of sneezing are often accompanied by a cold perspiration, which is soon followed by heat of the general surface."

Such is the state of things during the first and second weeks. After this the discharge from the nostrils diminishes and is less limpid, the obstructions less frequent, and of shorter duration. Still, the violent and prolonged sneezing continues, and the senses of taste and smell are impaired, even after the cough makes its appearance.

At this period there is added in many cases a peculiar nervous condition, which is closely connected with these affections of the head. It shows itself especially in the night, when the sufferer awakes after troubled dreams with a sense of suffocation, and an almost irresistible desire to get up and walk about, and go into the open air. This is not connected with asthma or difficult breathing, so far as the chest is concerned; it is, apparently, a disordered nervous condition.¹

As the disease approaches its end, during the latter part of the third and beginning of the fourth week, the nasal troubles gradually diminish and disappear with the other symptoms, leaving, however, not unfrequently a certain degree of irritability of the lining membrane, often accompanied by slight ulcerations or denudations of the surface, which are sore, painful, and bleeding.² In other cases these repeated annual attacks produce a thickening of the mucous membrane which may become permanent.³

¹ *Case 11.* Mr. E. F. Atkins. — "The nostrils become so much obstructed at night as to produce a sense of difficulty in respiration, and a nervousness difficult to describe."

Case 10. — This nervousness at night, is in some stages of the disease almost uncontrollable. The sense of impending suffocation on awakening in the night, apparently on account of the obstruction of the nostrils, the dryness or stiffness of the throat, are to the sufferer for the time being truly alarming.

² *Case 62.* — "I have headache and pain in the eyes, not unfrequently accompanied by a bloody discharge from the nostrils."

³ *Case 57.* Dr. Anson Hooker's case. — "She has had so much of the catarrhal inflammation that the mucous membrane of the nostrils is per-

THE EYES.

§ 7. The eyes are affected nearly as soon as the nasal mucous membrane. The itching begins at the inner canthi, and extends over the conjunctival covering of the whole ball, and also, in a greater or less degree, to that lining the eyelids. It is at first slight and yields to a little pressure upon the lids, but as the disease advances it increases, with an intense desire to rub them.¹

Together with the itching there is redness and swelling of the inner corners of the eye. This redness extends over the membrane, and is occasioned by the enlargement and inosculation in all directions of the conjunctival vessels. The sclerotic coat, over which the vessels can be freely moved, is not inflamed nor the vessels enlarged. At the same time there is profuse lachrymation, and the tears, finding their way into the nostrils, add to the discharge, — already abundant from those parts, — or, flowing over the cheek, irritate the skin.

The itching of the eyes, like that of the nostrils, comes on suddenly and is produced by similar causes. The sensitiveness to light of the whole organ is striking; so great, that frequently the sufferer is obliged to shut him-

manently thickened, obstructing them to such an extent as to oblige her to breathe through the mouth."

Case 67. — Has gradually increasing and more permanent thickening of the nasal mucous membrane, impeding respiration, and producing partial deafness.

¹ *Case 18.* — Suffers so much from the itching of the eyes that he cannot resist rubbing them, thereby increasing the irritation; he is often obliged to tie down his hands before going to sleep to protect his eyes from injury.

Case 57. Dr. Anson Hooker's case. — "The eyes are first affected, then the nose, throat, ears, and bronchia. The itching of the eyes is intolerable and very much aggravated by rubbing, blowing the nose, talking, singing, or much exercise. There is a profuse running secretion from the nostrils, and considerable mucous discharge from the throat and lungs."

self up in a dark room,¹ or use his eyes but an hour or two daily.²

The attacks are sudden and often without obvious cause; but they usually accompany, or follow closely, those of the nose. The itching and lachrymation once commenced, the irresistible desire to rub the eyes follows, and under the pressure and rubbing, the vessels enlarge, and the whole surface is soon of an almost uniform vermillion color. This enlargement of the vessels gives a sensation of roughness in the eye, but it is far less annoying than the itching which precedes it.

Notwithstanding this apparently serious state of things, the lachrymation and intense redness disappear, usually within twenty or thirty minutes, and leave the eye often

¹ Case 46. — Franklin Hunt, Esq., says: "The itching of the eyes is very severe; I cannot resist rubbing them violently, and am obliged to remain in a dark room, with the eyes covered, three or four days at a time."

Case 24. — "The eyes are so sensitive to light that I am obliged to confine myself for days in succession to a darkened room."

² Daniel Webster. — "I use the confidential hand of another to write you a short letter, my eyes holding out only to perform a small part of the duty expected of them every day. I am in the midst of my periodical catarrh, or 'Hay Fever,' or whatever you please to call it. I read nothing, and hardly write anything but signatures." And again, "My eyes allow me to write only about an hour a day." — *Private Correspondence*, vol. ii. p. 385.

Marshfield, Sept. 12, 1852. — "When the sun is very bright, I am obliged to avoid going out, on account of my eyes, except indeed when the sea is calm, and I am protected by an awning." — *Private Correspondence*, vol. ii. p. 552.

Mrs. J. A. F., Brooklyn, N. Y. — "My attack begins August 21st. After ten days I have very little use of my eyes, and keep them covered with a shade." Sunshine affects her eyes severely.

Dr. E. J. March, Paterson, N. J. — "I was attacked in 1846, when ten years old. The affection of the eye was very severe, and I was treated for *conjunctivitis* with applications of nitrate of silver, without relief to the symptoms or shortening of the period."

Miss J. D. — Has, for the past two years, suffered in June from inflammation of the conjunctiva, for which she consulted an oculist, but got no relief until she went to the White Mountains.

but slightly worse for the attack, — a succession of symptoms quite unlike those of ordinary ophthalmia.¹

Several cases of conjunctivitis in June have fallen under my observation, in which there was no evidence of a catarrhal affection in other organs; but still, inasmuch as these cases have resisted ordinary treatment, and have been relieved on going to the mountains, I suspect they have a cause similar to that of June Cold.

There is a sense of fullness over the eyes; ² the eyelids are swollen, the lower one most, and often oedematous, especially in the morning on first rising.³

The edges of the lids are inflamed, and the secretion of the meibomian glands is increased and apparently irritating. Crusts form upon the orifices of their ducts, and hence, not unfrequently, small ulcers beneath them. Sties are by no means an uncommon accompaniment of these difficulties.⁴ These troubles do not usually make their appearance until the second or third week.

¹ I have never seen any allusion to this affection in any special treatise on disease of the eyes. It certainly does not correspond with what is termed catarrhal ophthalmia. The course of the disease, and its disappearance without treatment, as the primary affection disappears, gives it a peculiar character worthy of a place in systematic works upon the diseases of these organs.

Case 80. — Mrs. F., during an attack applied to an eminent oculist in New York, who diagnosticated *granular conjunctivitis*, and treated her with nitrate of silver; after three visits, finding herself much worse for the application, she abandoned the treatment, and her eyes gradually recovered as the critical period passed by.

² Case 56. — Has a sense of fullness over the eyes.

³ Rev. Henry Ward Beecher. — “My eyes puff out and are very sensitive to the light, and full of tears. This stage lasts about a week or ten days, my eyes growing worse and the light more intolerable. A walk of half an hour in the full sunlight is enough at any time to bring on a paroxysm of eye symptoms. After about ten days the secretions become thicker, the nose is stuffed, the *eye* grows stronger, but the *lids* are inflamed and itch incessantly. About the fourth week the eyes are quite well.”

⁴ Case 66. — The eyes become very much inflamed and sometimes closed, as if suffering from a sty.

§ 8. LOCAL SYMPTOMS—MOUTH AND THROAT. 21

The lachrymal secretion diminishes in quantity, but becomes thicker, as the disease advances, and the lids are frequently glued together in the morning. In the night, the attempt to open the eye is attended with a spasmodic closing of the lids and a sensation of sticks and sand under them, which is only relieved by the free lachrymation which follows. As a general rule, both eyes suffer equally and at the same time.

By the end of the third week the affection has nearly ceased, and in a short time the whole trouble disappears without permanent disability in the organs.

THE MOUTH AND THROAT.

§ 8. These passages are affected in the early stages. The mucous membrane is reddened and thickened. There is itching of the roof of the mouth and the parts beyond. The velum is relaxed and thickened, and the uvula often so elongated and swollen, as to give the sensation of a foreign body hanging in the throat;¹ and falling backward, compels to frequent hawking to throw it forward upon the tongue for the relief of this sensation. This swelling and stiffness, combined with the inability to breathe through the nostrils, occasions or adds to the difficulty of swallowing, so much insisted upon by the sufferers.²

The tonsils are swollen and painful, especially in swallowing. The secretions are thickened and sticky.

¹ Case 10. Author. — The sensation in the throat is of a general swelling and confusion of the parts; an indefiniteness as to the position of organs, producing distress in swallowing, more annoying than can well be described. The closed nostrils and consequent breathing through the mouth during sleep make it and the throat dry and almost immovable, arousing the sleeper with a sense of impending suffocation.

² Rev. Henry Ward Beecher. — "Eating becomes a matter of skill. You cannot eat with your mouth at the same time that you are breathing through it. Two trains meeting on a single track, one or the other must switch off. Thus, you chew and hold your breath; and then you switch to one side your cud, and breathe a while. Thus you shut off, alternately, bread and breath. This stage lasts about two weeks more."

The itching just mentioned extends to the posterior nares, and also through the eustachian tube to the ears. It is so annoying that the tongue is frequently applied to all parts of the mouth within its reach, and rubbed against them for temporary relief.¹ It also occasions frequent hawking and other acts which give motion to these parts. The itching within the ears is as intolerable as the attempts at relief by thrusting the tip of the finger into the external passage are unsuccessful in relieving it. The lining membrane of this passage is frequently irritated, and discharges a thin, limpid fluid.²

The mouth and throat become dry and parched, especially in the night; in part, undoubtedly from the difficulty of breathing through the nose. It is not accompanied by thirst.

There is redness and swelling of the uvula, velum, and tonsils, and of the mucous membrane of the mouth generally, with some enlargement of the mucous glands, but no ulcerations of the surface, nor any tendency to diphtheritic deposits.

CHEST.

§ 9. The chest symptoms may be divided into two classes, cough and asthma.

Cough. Although very few escape cough in some form, it is not so constant a symptom as those already described.³ It commences at the end of the first week with

¹ Case 59. — "I have almost constant tickling of the roof of the mouth and throat, varying in severity but continuing through the period of attack. The trouble in the throat, as a general rule, is worse in the night."

² This secretion may sometimes be produced by the irritation following attempts to relieve the itching, but in others it appears without any such cause. It seems to be one of the consequences of the general irritation of the mucous surfaces.

³ Case 7. Dr. J. C. Hayden. — "I have no cough, excepting sufficient to dislodge a somewhat increased secretion from the lungs."

Case 59. Mrs. B. — "The cough commences in the last two weeks, but it is not a constant symptom, nor does it become very annoying. There is very little expectoration."

a tickling at the top of the windpipe, producing a frequent short cough—a cough of irritation.¹ The tickling soon becomes more constant and the cough more annoying, with pain behind the breast-bone and some soreness of the throat. This pain is especially severe in the morning on first awaking, when it has a tearing character.

By the end of the second week the cough becomes paroxysmal, and although it often occurs together with the attacks of sneezing and nose-blowing, and keeps pace with these in a degree, it also comes on at other times and from other causes. The night attacks are severe, painful, and so incessant that no sleep can be got for hours together. The patient is often obliged to sit up in bed, leaning forward and grasping his knees, or, leaving his bed altogether, as he becomes fatigued, he grasps firm objects to aid in the spasmodic efforts for relief.² The expectoration is little or nothing at this stage. Often, after a long succession of coughs, a very little transparent mucus, stringy and tough, is thrown off, giving only slight momentary relief.³ These attacks cease, like the attacks of sneezing, apparently when the nervous system is fatigued and thus exhausted of its excessive irritability. It is at this period that the violence of the cough

¹ *Case 3.* John J. Dixwell, Esq. — “Early in September a bronchial affection sets in, when the nasal catarrh has diminished, and continues through the month, and sometimes through the whole winter.”

² *Case 60.* Dr. Derby's case. — “After about two weeks, irritation commences in the throat with cough; at first slight and not very frequent, and without expectoration. This cough increases, and during the last two weeks becomes extremely annoying and almost incessant while lying down, compelling her to sleep in an almost upright position. She first suffered from asthma in September, 1864, four months before the birth of her first child.”

³ *Case 20.* W. H. Y. Hackett, Esq., of Portsmouth, N. H. — “The greatest severity is during the first three weeks, and of these the second is the most severe. It goes off with a hard cough and a difficulty in raising mucus. In the night it often takes the form of asthma, rendering it difficult to sleep.”

often produces retching,¹ which sometimes ends in vomiting.²

By the end of the second week or the middle of the third, the cough is less irritating and seems deeper in the chest. At this time it is often accompanied by pains at the lower parts of the chest, around the points at which the muscles exercised in these violent efforts are attached.³ There is a slight wheezing or whistling during expiration principally, not impeding respiration but making it somewhat noisy.

The expectoration is thicker, starch-like, in larger quantity, and its expulsion gives a certain degree of relief to the cough.⁴ It is generally yellowish, sometimes greenish, and only occasionally streaked with blood.

The ordinary termination is at the end of the fourth week; at other times, and with some individuals habitually, it takes its leave very gradually, or even extends into the winter.

§ 10. *Asthma*. This sets in generally about the fourth week, after the cough has lost something of its severity, and the watering of the eyes, the sneezing, and discharge from the nose has diminished.⁵ With some it begins at

¹ Case 62. — "Cough often spasmodic, producing retching and a disposition to vomit, but not absolute vomiting."

² Case 22. — "At times, especially in the night, the cough is very severe, spasmodic in character, and in some instances producing vomiting."

³ S. A. Wood, Boston. — "I have a spasmodic cough, which strains me at the 'pit of the stomach,' and gives pain there and in the front of the chest." This cough is his most annoying symptom.

⁴ Rev. Henry Ward Beecher. — "About the fourth week the eyes are entirely well, the nose somewhat congested still, but the disease drops down upon the chest. Asthma develops. A convulsive cough sets in. In the morning I raise a thick, starch-like mucus, without blood or any admixture, but like calf's-foot jelly. It has a slight metallic taste. This stage lasts about a week or ten days."

⁵ Case 4. — "I have never had asthma at any other time except once when I was very much exposed and wet. The asthma is severe at times, particularly after eating heartily, when it is much worse. When I am suffering from asthma I am generally free from either running or irri-

the end of the first week.¹ It is by no means so constant a symptom as these last, nor is it so constant as the cough.² Many escape it altogether, and to those who do not escape it, it is generally much less annoying than the earlier symptoms. The attacks of difficult breathing may be severe, but they are not so long as those arising from other causes.³ They usually come on during the night, after the first sleep, and cease in about an hour, to reappear towards morning.⁴ Some accuse a hearty meal as the cause, but with most the paroxysm is without obvious cause.

Examination by auscultation and percussion furnishes no other signs than those of an ordinary catarrh. Mucous râles are heard, and in some parts of the chest there

tation at the eyes or nose. It lasts till the latter part of September [this is in Philadelphia, Pa.]; by the 1st of October I am perfectly free from the cold proper; though sometimes for a year or two past, by not taking proper care of myself when it was passing away, I have had a cough for some time afterwards, generally a slight one, but still annoying. Sensitiveness of the nose and eyes of late years has increased."

¹ Case 9. Robert F. Fiske, Esq., of St. Paul, Minnesota. — "My autumn cold while I lived at the east [New England] was very punctual in its advent about the 20th of August. The mucous membrane of all the air passages in time became very much inflamed. For many nights after the 1st of September, to about the 12th, I was unable to get any comfortable sleep, because of the severe attacks of asthma which were always a part of the affliction occasioned by the cold, and generally every afternoon I was mentally and physically prostrated by a hot, dry, burning fever."

² Case 57. Dr. Anson Hooker's case. — "At times has asthmatic attacks, the feeling of breathing through gauze or sponge."

Case 1. — "Sometimes I have an asthmatic attack, but by no means every year. During three years only have I had difficult breathing."

³ Case 42. — Dr. P. suffered severely from asthma, beginning at the end of the first week, and ending with the complaint about the first of October. With him it was by far the most distressing part of the disease.

⁴ Case 8. Daniel Webster. — "Sometimes the force of the catarrh seems pretty much broken, and then it returns, attacking the head, eyes, nose, etc., with great violence. I think it is approaching its last stage, which is the asthmatic stage. Some of our friends, who are subjects of the complaint, and who have short necks, dread this. I do not fear much from this, although in this stage I feel its influence more or less on the chest." — *Private Correspondence*, Sept. 28, 1851.

is deficiency of respiratory sound; the asthma is accompanied by sibilant râles, and the noisy inspiration and expiration common with this affection. Percussion is natural.

The absence of bronchitis, or other affections of the lungs or of the heart; the suddenness with which the attacks begin and end, lead to the belief that they are in part, at least, spasmodic, and not dependent upon organic lesion. That the larger bronchiæ, and those of the second order, have muscular fibres, is proved; and we have no right to deny to these passages the possibility of spasm, when no one denies it to similar fibres in the stomach, intestines, bladder, and other hollow organs. With regard to the minute bronchiæ and air vesicles, it is not improbable that their vessels may undergo changes similar to those in the nostrils and conjunctiva, by which these passages are temporarily shut, and, like them, as suddenly opened.¹ In all phases of this singular disease the nervous element is strongly marked.²

HEART.

§ 11. The action of the heart is more frequent and its beats quicker than in health.³ During the latter stages the pulse is not unfrequently intermittent, with a

¹ Muscular fibres have been proved to exist in these also. —Virchow's *Archives*, 1872.

² Trousseau describes cases of persons who suffer at various seasons of the year for two or three months, from attacks of sneezing and watering of the eyes, repeated three or four times daily. In the interval they are perfectly well, and yet, without evidence of disease in the respiratory system, sooner or later develop asthma. The two affections he considers expressions of the same nervous disorder. —Trousseau, *Clinique Medicale*, vol. ii. p. 442, Paris, 1868.

³ Case 27. — "By the end of the fourth week in September, the lungs suffer, and asthmatic breathing sets in; the attacks at times severe with a good deal of cough during the intervals of the paroxysms. The action of the heart is at the same time increased. Soon after the middle of September all the symptoms abate, and disappear during the last week of the same month."

peculiar uncomfortable feeling in the left breast, as though the respiration were in some way interfered with.¹ There is also shortness of breath on exertion, especially in ascending heights.² Generally this condition of the heart is temporary, and ends with the other symptoms. In other cases it has continued longer, and some have dated heart trouble from attacks of Autumnal Catarrh.³

SKIN.

§ 12. The skin does not escape the influence of the disease. In some cases itching or numbness of the scalp is one of the first symptoms, accompanying the watering of the eyes, and the discharge from the nose. More frequently these irritations of the skin appear in the later stages;⁴ then the trouble is upon the shoulder-blades, or

¹ *Case 10.* Author.—After having suffered from catarrh for many years, I perceived toward the later stages that my pulse was becoming irregular in its beats, and also variable in strength, and at times intermitting. This increased with the successive attacks, and even extended into the winter. Since my visits at the mountains during the critical period, these symptoms have disappeared entirely. I cannot but think they were caused by the catarrh.

² *Case 3.* John J. Dixwell, Esq.—“I have had no asthmatic troubles, although I have had some difficulty of breathing on going up hill, which has increased very much during the last two or three years, caused by a certain degree of enlargement of the heart.”

³ *Case 28.*—Judge Shaw suffered from heart disease, followed by dropsical effusions, of which he died. Dr. Hayward was of opinion that the disease was aggravated, if not produced, by the Autumnal Catarrh, and the consequent obstruction of the circulation through the lungs.

Joseph Peabody, Esq., informs me of a jurist of Chicago who suffered from cardiac disease, which he believed was produced by Autumnal Catarrh.

⁴ *Case 71.*—“Commences with itching of the scalp, followed by itching of the eyes and nose, and a profuse discharge from the nostrils—sometimes eight or ten handkerchiefs will be saturated with limpid water before breakfast, frequently two dozen in the course of the day.”

Case 46.—“The irritation of the skin, especially of the scalp, is quite annoying.”

Case 70.—“I suffer from itching of the skin, especially on the back.”

Case 66.—“Itching of general surface.”

along the spine ; sometimes the skin over the breast-bone is the seat. This itching is of a peculiar kind. The surface of the skin is, to the eye, perfectly well. There are at first neither pimples nor redness, but the itching on the scapulæ is almost incessant. The itching of the skin and face, in my own case, is annoying, and is only relieved by frequent rubbing. The itching on the shoulders is relieved only by hard rubbing with a stiff brush until smarting is produced. Either from rubbing, to allay the intense itching, or from some other cause, small pimples appear. If the tops are removed a little serum exudes, which dries, and forms a scale.

Eruptions of a vesicular character have been observed with much itching, with other eruptions resembling urticaria — white wheals upon a red ground. These eruptions have the peculiar character of the disease, coming suddenly, lasting for an hour or two, and disappearing as suddenly as they come ; the attacks recurring every day or two.

The alae of the nostrils are irritated, and small vesicles form, which may remain some days and then dry up, or the skin may be more deeply affected with slight ulcerations, lasting a week or two. With some individuals the whole nose is swollen and red, the interior of the nostrils inflamed, causing very considerable annoyance. The upper lip is chafed by the discharge from the nostrils and the use of the handkerchief, and herpetic eruptions appear around the mouth.

That the skin is in an unnatural condition is proved by the fact that it is easily chafed ; and the chafed spots, instead of soon drying up with a slight scale, pour forth serum for some days. After healing, the new cuticle remains a long time red and tender, and easily abraded. This is most frequently seen around the neck.

Miss G. — Has eruptions upon the face during the attacks ; itching of the skin from the first, which becomes intense during the middle period.

The axillae are often irritated ; the glands enlarge, and small abscesses form, which are painful, and come slowly to the surface ; or, failing in this, the inflamed part long remains hard and sensitive.¹

The tendency to perspiration on slight exertion is increased ; the skin is moist and clammy, and more sensitive to changes of temperature, especially to the effect of cold, which not only produces chilliness, but is quickly perceived in an attack of sneezing, or other catarrhal symptoms. The secretion of the kidneys is not much altered, but sometimes diminished in quantity, and a relative increase of uric acid proportioned to the diminution.

¹ Rev. Henry Ward Beecher. — After a week or ten days of the asthma, "The disease quietly disappears, or else it breaks up with some row in the system, such as a breaking out all over the body of itching blotches, or a violent night of cough and asthma, that wrenches everything about one."

Case 44. J. T. Hodge, Esq. — "Besides extreme itching of the skin, I have been troubled with an eruption on my legs and wrists, sometimes scattered and again in bunches, which become swollen and sore. These also itch at intervals violently, and when the pustules become raw and scab over, they do not heal. I had supposed it 'prickly heat,' but as it has now come on for the third year with the 'Hay Fever,' it seems to be long to it. With the eruption on the limbs, I have little sties on the eyelids of one eye, which have lasted now over four weeks."

W. H. Lowe, Providence, R. I. — One year at Martha's Vineyard, during the critical period, had a redness of the skin of the color of a boiled lobster, compelling him to keep his bed five days.

CONSTITUTIONAL SYMPTOMS.

§ 13. BESIDES the local symptoms described in the foregoing sections, there are others of uncertain seat, which should be known, for the full understanding of the disease.

Some patients describe a state of incubation or development, commencing a week or fortnight before the more distinct onset, during which there is a slight febrile excitement, easily increased by a cold, or by irregularity of diet.¹ With many there is an unusual sensitiveness of the nervous system, for a few days at least, before the attack.

In some cases the attack commences with a weakness, a sense of exhaustion, or "goneness at the stomach,"² sleep unsound, and disturbed by unpleasant dreams, headache, and general uneasiness.

¹ *Case 2.* Rev. Henry Ward Beecher. — "There is, I am persuaded, a slight febrile disturbance of the system. Ordinarily, it is not troublesome, or even noticeable. But the least cold taken, or the slightest irregularity of diet, develops heat and a kind of knitting of the sutures of the skull, as if they were slightly moving or matching themselves over again. Sleep is also full of dreams not celestial. But the whole passes so lightly, that I did not till within three years make it a matter of study."

Daniel Webster. — "The enemy may come as a thief in the night, or he may be as bold as a lion." — *Correspondence*, vol. ii. p. 463.

"*Aug. 29th.* — About noon, I thought I felt catarrhal symptoms. There was some tendency of defluxion from the nose, the eyes did not feel right, and what was more important, I felt a degree of general depression which belongs to the disease." — *Ibid.* p. 469.

² *Case 40.* — "The attack commences August 20th, with great weakness, which is soon followed by a 'sense of goneness' at the epigastrium, and palpitation of the heart. The weakness diminishes with the catarrhal development, and this last also diminishes with the commencement of asthma."

§ 13. CONSTITUTIONAL SYMPTOMS—FEVER. 31

More frequently it is only after a few days that signs of constitutional disturbance appear.¹ Chills, and heats, and burning of the palms, are among the common symptoms of fever.² Often a chilliness over the whole surface of the body, and a sensitiveness to cold, which prompts to the use of warmer clothing, at night especially.³ Generally there is little evidence of the third stage of fever, the sweating; but in exceptional cases the sweating towards the end of the disease is profuse and exhausting.⁴

The pulse is generally accelerated and weakened. The action of the heart is weakened, and easily accelerated by slight exertion; its sounds are shorter and more abrupt than in health. There is palpitation.

¹ In 1866, Morrill Wyman, Jr. (*Case 14*), while under the influence of the catarrh, left Cambridge, September 7, for the White Mountains. He suffered much in the railway train, but in the afternoon bore very well the fatigue of ascending Grand Monadnock, 3,718 feet. The following day, late in the evening, he reached the Crawford House. His feet and hands were cold, he coughed much and slept little. 9th. Pulse 100; tongue coated; appetite slight; too weak to walk out of doors without great fatigue; headache and giddiness. During the night his skin was flushed, hot, and dry. On the 10th he reached the Glen by the way of Upper Bartlett. In two or three days all these symptoms disappeared, and he remained well during his stay at the mountains.

² *Case 20.* W. H. Y. Hackett, Esq. — "I have the symptoms of fever, high pulse, hot palms, and severe pressure upon the lungs. For a month I am unfit for my business. I am a lawyer, and have on several occasions had to give over the trial of a case after it was opened. Its greatest severity is in the first three weeks; of these the most severe is the second. It goes off with a hard cough with a difficulty in raising mucus. In the night it often takes the form of asthma, rendering it difficult to sleep."

In my own case there is heat and feverishness, perhaps more thirst than usual; but the disease with me displays its constitutional influence rather in general uneasiness, and a sensitiveness to a fall of temperature.

³ Dr. Derby's case. — "The influence upon the system shows itself in a loss of strength, loss of appetite, and loss of flesh; a sense of chilliness of the whole body, which prompts her to use more clothing than most persons, especially at night."

⁴ *Case 43.* — "My general health is less firm than formerly, and I have a bronchitis which extends into the winter with nasal catarrh. I have profuse night sweats through the height of the disease, which at first give some relief, but when farther advanced, prove exhausting."

The strength is decidedly lessened ;¹ and, in addition, a disinclination to exertion which is hardly attributable to this weakness ; it is out of proportion to it ; it is rather a want of will to make effort of any kind.

The appetite is generally diminished,² but not much thirst ;³ there is loss of flesh, sometimes rapid and considerable, even when the symptoms are not severe. The cessation of the symptoms is accompanied by as rapid a recovery of the usual weight.

The condition of the bowels is subject to variation as to constipation, or the reverse, during the attack, but there is no evidence that it bears any close relation to it. In two cases an attack of cholera morbus, or some similar affection of the bowels, occurred at the time when Autumnal Catarrh usually appeared ; in both cases the

¹ *Case 32.* — "I lose strength and am so much prostrated generally that I am unable to walk about. The loss of appetite is as complete as though I was suffering from acute fever. My disease has sometimes, so far as the cough is concerned, followed me into the winter, so also has the expectoration of mucus." Mr. W. of Brandon, lost flesh, and the cough continued so long into the winter as to become alarming. He was in Quebec, in 1870, perfectly well during the catarrhal season.

S. A. Wood, Boston. — "My appetite is diminished ; I lose flesh and strength."

Case 66. — "There is always much fever, constant flashes of heat passing over the whole body, hands very dry and hot. It is impossible to tell you of the great lassitude which accompanies it."

² There are exceptions to this. Two gentlemen have both voracious appetites during the attack, but notwithstanding lose flesh.

³ *Case 20.* W. H. Y. Hackett, Esq. — "Except a few days when sickest, I have a good appetite, better than at other times. But my strength is very much reduced. The second week of the attack I am most of the time unable to sit up, and can take but little food."

Case 59. — "Appetite and strength diminish during the progress of the disease, compelling her to keep her bed a part of the time."

Case 38. — Was at the Glen House August 12th. Previous to that time had been losing flesh. October 1st he left the Glen, on his return to his home, which is on the Hudson one hundred and twenty miles from its mouth ; he had gained in weight one half pound daily. August 16, 1868, he had lost twenty-five pounds of flesh, and was much weakened, but had not felt sick. He suffers from palpitation of the heart during the attack.

catarrh came on a week later.¹ "Typhoid fever and dysentery" are reported to have replaced the disease.²

That the impression upon the nervous system is decided, must be admitted. The greater part of the sufferers speak of the discouraging, depressing effects, and utter inability to do mental work, in the after part of the day especially. The feeling that there is no escape until the customary period has passed, weighs heavily upon them.³ This, however, is not universal; some declare

¹ Mr. Holland has diarrhoea during attack.

² Case 66. — "I have given you 'Hay Fever' as I have it every season, but this season my experience has been very different. The third week in August (the time of the usual attack of catarrh) I was attacked very severely with *cholera morbus*; for three days was severely ill; did not entirely recover until the first of September; then the Hay Fever came on (before my illness I had all the symptoms of the disease); when it did come the sneezing was only a short time, but the asthma worse than I ever had it. The cough very hard, tight; I could not speak without coughing; breathing very short, so I could not walk across the room without suffering for breath. I have heard of a person who had catarrh many years; one year she did not have it and was very dangerously ill with typhoid fever and dysentery, the next year the Hay Fever came back again. I do believe it is a protection against other diseases."

Case 45. C. F. W. — One year had an affection of the bowels with diarrhoea; the catarrh did not appear until this ceased, when it came on as severely as ever.

³ Case 8. Daniel Webster. — "The disease is depressing and discouraging. I know that there is no remedy for it, and that it must have its course. It produces loss of appetite and great loss of strength."

The following letter from Mr. Webster to President Fillmore indicates the severity of the disease and its depressing influence: —

"Boston, November 5, 1850. — I left New Hampshire yesterday, having become free of disease, and well, except so far as this protracted catarrh has reduced me. I am quite aware how inconvenient my long absence is to you and to the government, and sometimes feel that as this illness is of annual recurrence, I ought to regard it as unfitting me for an office [Secretary of State], the duties of which require constant attention. I must now go to Marshfield for a few days." — *Private Correspondence*, vol. ii. p. 400.

"Washington, September 10, 1820. — My annual cold is now heavy upon me weakening my body and depressing my spirits. It has yet a fortnight to run, and perhaps will sink me lower than it did when strong excitement enabled me to withstand it. I have lost a good deal of flesh, and you will

that with the exception of the eyes, or the annoyance from the obstruction of the nostrils, and nose-blowing, the readiness for intellectual labor is as great as ever.¹

Fullness and heaviness of the head, painful sensations in the forehead and behind the ears, and a painful feeling as of a band around the head above the eyes, partial deafness, are not unfrequent symptoms in some stage of the affection.²

The nervousness at night, and the consequent inability to sleep, are frequently complained of. If sleep is obtained, it is troubled with dreams, and a sense of suffocation, not always dispelled on awaking.³ These sensations may occur without any of the symptoms of asthma, either in difficult breathing or wheezing. During the day, also, there are nervous sensations of a different kind, — irritability, and liability to annoyance from trifles.

think me thin and haggard. My eyes allow me to write only about an hour a day." *"September 12.* I am in the midst of my periodical catarrh or 'Hay Fever,' or whatever you please to call it. I read nothing, and hardly write anything but signatures."

"Marshfield, October 3, 1851. The catarrh with its sneezing and nose-blowing, its cough and its asthma, seems to be taking leave; my eyes are still weak, but my greatest difficulty at present is a general want of strength."

Mrs. J. A. F. — "I must confess to being very irritable during the attack."

¹ *Case 9.* — "Generally every afternoon I was mentally and physically prostrated by a hot, dry, burning fever."

Rev. Henry Ward Beecher. — "Otherwise than the difficulty of using the eyes, there is no hindrance to intellectual labor."

² *Case 19.* — "I have a pain in the forehead and behind the ears."

Case 58. — Has a sense of fullness in the head, with pain, and a feeling as of a band around the head above the eyes.

Case 39. — "I have pain in the head and partial deafness."

³ *Case 10.* Author. — I have at night suffered much from a peculiar nervousness difficult to describe, but which prevents sleep and almost drives me from my bed to relieve a sense of closeness in the air for which I know there is no reason. There is also an irritability during the day which is unknown at other times, and which often makes my duties irksome. The accompanying weakness during the third week adds very materially to these troubles.

Case 69. — "The disease is accompanied by a nervous, irritable state."

The disease is peculiar in its variations in severity from day to day. At times, the relief for the most of the day will be so great, that in spite of many former disappointments the patient is persuaded that his troubles have now come to an end. A single symptom, like asthma, will be relieved, and the only annoyance will be in the condition of the nose and eyes. And yet on the following day the more painful symptoms will return with all their force.¹ This has probably led some to believe that it has an intermittent character.² But intermissions on alternate days are so rare that it can hardly be deemed a characteristic of the disease.

In some cases the catarrhal symptoms are comparatively slight, but the peculiar prostration and inability to make physical exertion are as great if not greater than with many who have the other symptoms in full force.

It is not a little singular that by far the greater number of persons who have undergone these annual attacks do not find that the health has suffered. As a general rule, the weakness and discouragement disappear at once, and the various organs soon show but little evidence of the recent disturbance.³ Indeed, some declare that they enjoy better health after the attack than before it.⁴

¹ *Case 8.* Daniel Webster. — "Some days I feel quite well, and can keep out without inconvenience if the weather be fair; on other days I cannot go out at all, fair or foul."

Case 2. Rev. Henry Ward Beecher. — "During the whole period of from five to six weeks, the disease is subject to distinct remissions. Although I have had twenty years' experience, I am not cured of believing, every year, that it has ended its career two or three times during its progress."

² *Case 15.* Edward Wyman, Esq. — "I think I have observed an intermitting character in the symptoms; that they were more severe on alternate days."

³ *Case 22.* Samuel Batchelder, Esq. — Was first attacked at the age of 24, and has experienced an attack each year from that time till 1876. He is now 92, and is hale and active. The severity of the attack has not increased, perhaps rather diminished within the past few years.

⁴ *Case 20.* W. H. Y. Hackett, Esq. — "I have never perceived that my

Some persons who escape the disease at the mountains, so far at least as the catarrhal symptoms are concerned, do not express themselves so much relieved as the severity of these symptoms would lead us to suppose. They are, they say, uneasy and are nervously disturbed in a way they can hardly describe, and that this state continues and the return home is not followed by the great relief felt after the disappearance of a full attack of the disease. Whether this is the contrast between suffering and health, the feeling of the convalescent, we cannot say. A lady of great intelligence, and a careful observer, writes: "It is my theory that people who have the catarrh are really better for having it than for escaping it. It seems to me so inseparable from the organization as to make it bad to avoid it." I am quite certain the number of persons so suffering is small; those who have fallen under my observation are of a very sensitive nervous organization, and of unusual mental activity.

Again, the subjects of the disease are not subjects of catarrhal affections at other seasons of the year more than persons generally. Some declare that they are less subject to them, that they very rarely have colds from exposures that are likely to produce them in others.¹

general health was affected by the 'Hay Fever,' and I am generally in better health after the attack is over than before it came on. I dread the approach of the middle of August, as the certain approach of suffering."

¹ Case 27. — Is well through the other seasons of the year; he never suffers from catarrh in June, nor at other times from ordinary colds more if as much as most persons.

Case 15. Edward Wyman, Esq. — Has suffered from annual catarrh in September, for twenty-eight years in succession. He has no catarrhal symptoms annually recurring in June, and seldom has a cold at other times of the year.

Case 1. — "I ought to state that I think the 'cold' is a disease attacking the whole system, and attended with a good deal of fever; certainly it often makes me very sick, used up, and good for nothing; but, on the other hand, I never suffer from colds, or very rarely, and enjoy good health, having never been sick before this malarial fever caught on the bar of the Mississippi River."

In several instances those who have suffered from a catarrh in June, — “Rose Cold,” “Hay Fever,” — and have subsequently had a regularly recurring catarrh in autumn, have at once ceased to suffer from the first, or have, at least, found it much mitigated in severity. In other cases two successive catarrhs have appeared at each of the seasons, and after a few returns the first cease. In all cases the Autumnal Catarrh is the more severe.¹

In but three instances has pneumonia been noted as occurring in the course of the disease. In one case, a recurrence of the pneumonia three or four years in suc-

Case 69. — Has very seldom a cold at any other season of the year, never like that of September.

¹ *Case 58.* — First experienced a cold (hay cold) in June when sixteen years old, while walking in a garden in New Bedford, Mass. Her first attack of Autumnal Catarrh was when she was thirty-four, at Fitchburg, Mass. From that time it has recurred annually, and the June Cold has very much diminished. She never had cough with the June Cold; with the Autumnal it is severe.

Case 75. — Mrs. Bancroft, Delaware County, Penn., from twelve years of age has had June Cold, beginning June 20th to 30th. The paroxysm came on with great regularity at 2 A. M., 4 A. M., 8 A. M., 12 M., 4 P. M., and at bedtime, each attack lasting an hour. It ceases the first week in July. 1861-1865 lived in Washington, and had no attack of June Cold. The affection is of the eyes and nose alone; no trouble in the throat or lungs, no loss of appetite, no prostration. After the cessation of the June Cold, Autumnal Catarrh came on with severe asthma. The attack commenced annually August 19th or 20th.

Case 41. J. W. Danforth, Esq. — Had an annual catarrh, which for three or four years commenced in June, while roses were in bloom. The attack at this season of the year ceased when the Autumnal Catarrh commenced; this last has continued to the present time, about nineteen years.

For the past four years I have had a catarrhal affection, annoying but not severe, with watering of the eyes and nose, sneezing, and itching of the throat and ears, from the middle of May until the first week in June, during the flowering of the cherry, pear, and apple. Since this began my attacks of Autumnal Catarrh have been so decidedly less severe that I have remained in Cambridge for the past three years during the critical period. Whether this diminution in the disease is owing to a more careful management and treatment, or to some hidden cause, is a question.

cession, during the attack of catarrh, is reported. This repeated succession would lead to a question of diagnosis, especially as it cannot be verified by a detailed history of the symptoms. In one instance, the pneumonia appeared in September; the catarrh ceased for two weeks, to return after the pneumonia disappeared.¹

It must be admitted that however rapidly most patients recover perfect health after an attack, some evidently fall into bronchitis, and so continue with cough and expectoration through the autumn and even into the winter. In one case, the bronchitis became alarming, and a removal to Georgia through the winter was thought advisable. Under the influence of a mild climate it disappeared.

The fact that Autumnal Catarrh does not prepare the way for an inroad of inflammatory diseases of the chest to the extent that the violence of the symptoms would lead us to expect, makes against its supposed inflammatory character.

§ 14. By an examination of the table of cases at the end of the volume, it will be seen that the groups of symptoms vary in severity and in constancy. With these changes and combinations, the disease assumes different external appearances. The expressions of disease in an individual suffering from asthma are very different

¹ *Case 64.* — In 1856 had pneumonia in the month of September, while suffering from catarrh. Was ill two weeks, during which the catarrh was suspended, to return after the pneumonia ceased. After this had the first attack of asthma.

Case 19. — "In 1865, during second week in September, I was attacked with chills, followed by fever and headache, cough, expectoration of brick-dust color, and very adhesive. I was kept in bed two weeks, and did not recover strength under seven weeks." Although he is unable to state the diagnosis, there is good reason for believing that he suffered from an attack of pneumonia.

Case 75. Mrs. S. B. — "In 1864 I had pneumonia. I have asthmatic attacks which occur at any part of the year, but they are most severe in September. My nostrils are so much obstructed that I am unable to swallow."

§ 14. GROUPS OF SYMPTOMS — COMPARED. 39

from those of one who suffers from head symptoms only, or from cough. So, again, it may be of longer or shorter duration, varying in the time of its annual appearance, or disappearance, or both. In this manner only can we speak of it as having different forms. We have none of those distinctions which are important in diagnosis or prognosis, that we see in pneumonia, or typhoid or intermittent fever.

The following abstract of the table at the end of the volume exhibits the different groups of symptoms and their relations to the sexes so far as stated : —

			Head Symptoms. (Eyes, Ears, Nose, Throat.)	Chest Symptoms.	
				Cough.	Asthma.
Severe . .	{	Males	57	22	23
		Females . . .	23	15	13
Mild . .	{	Males	9	27	10
		Females . . .	3	8	6
Slight, or Wanting	{	Males	4	13	30
		Females . . .	3	5	12

An examination of this abstract shows at once the great preponderance of the affections of the eyes, ears, nose, and throat over the other groups. In one instance only were these affections wanting; and in a large number the severity greatly exceeded that of the other groups. Next to these stands the cough. Of the seventy-one males, only thirteen escaped or had it slightly, and of the twenty-nine females, five escaped. The cases of severe asthma and severe cough are nearly equal, but there is quite a large number — thirty males and twelve females — in which it is very slight or entirely wanting. The chest symptoms evidently stand in a much nearer relation to each other than they do to the head symptoms.

COURSE.

TIME OF BEGINNING, DURATION OF GROUPS OF SYMPTOMS, AND TERMINATION OF THE DISEASE.

§ 15. THE commencement is marked in various ways. By some it is said to begin as soon as the system is debilitated by the heats of summer, by others the attack is first felt on the approach of cool weather,¹ in both cases, therefore, variable.² Others, more definitely, note the days within which it appears, while others, again, declare that the symptoms begin on the same day of the month by the calendar, for years in succession.³ Dr. Hayward

¹ *Case 73.* — Second question : When does it commence ? Answer : "The first cool nights the last of August." This patient resides in Fall River, Mass.

² *Case 22.* Samuel Batchelder, Esq., of Cambridge. — "This attack commences after the heats of summer, near the last of August, giving the impression that it is a consequence of the debility occasioned by these heats."

³ *Case 44.* — "My wife and her sisters in Plymouth, Mass., have the disease on the 28th of August, annually. If I were in Brooklyn, N. Y., and my wife in Plymouth, Mass., it was punctual in its visitation to each of us and to her sister ; and with all of us it lasted six or eight weeks."

Case 4. — "It commences about the 23d or 24th of August, sometimes perhaps a day or two sooner."

Case 21. — Gave the period of invasion from the 20th August to the 5th of September, varying with the state of the atmosphere. In a second letter, recently received, the dates given are from about the 10th to 15th August. "Have found that *all localities* in New England or the Provinces, within fifty miles of the ocean, invite an attack from about the 10th to 15th of August, whilst elevated positions inland (away from the ocean) always mitigate the severity of the disease." This statement is undoubtedly too sweeping.

1871 was a very dry season and vegetation very slowly developed. The disease was late in its appearance ; in several individuals not until the 10th of September ; its course was also unusually mild. I was with my son in Belgium, Germany, Switzerland, and France ; during that season we escaped entirely.

says that Judge Shaw was attacked on the same day, and almost at the same hour, each year.¹ Some think it is connected with vegetation, and as that is forward or late, so the attack is hastened or delayed.² One sufferer declares that his disease commences as soon as the pollen appears upon the Indian corn³ (*Zea mays*). I have noticed that it is nearly coincident with the flowering of Roman wormwood (*Ambrosia artemisiaefolia*).

An examination of the Tabular View shows more variations than some of these statements would lead us to expect.

Table showing the Number attacked during each Week in August.

First week in August	1
Second week	4
Third week	64
Fourth week	20
First week in October	1
Uncertain	1
	<hr/> 91

¹ Dr. Hayward's account of the case of Lemuel Shaw, late Chief Justice of the Supreme Court of Massachusetts, states that he "had been the subject of this affection for thirty years, and it recurred the same day, the 18th of August, and almost at the same hour." Lemuel Shaw, Esq., of Boston, thinks the date of the father's attack was between the 20th and 22d of August.

It is not difficult to explain this belief of the return on a certain day or even at a certain hour, if we suppose the patient has a preconceived notion with regard to the particular day or hour; he would then be looking for it, and he would have in addition all the influence of this preconceived notion upon a nervous system remarkably susceptible to such influences. There are other diseases in which a mental emotion is well known to produce an attack — asthma is one of these.

² Case 24. — Jacob Horton, Esq., who lives at Newburyport, Mass., near the sea-coast, writes as follows, September 26, 1865: "The past year (1865) has been a remarkable one — very dry and very hot. All vegetation is three weeks earlier than usual, and my catarrh came on just three weeks earlier (the first of August), and had all the characteristics, but moderate in degree, of course. I have no appetite, and but little sound sleep."

³ Case 19. — "My first attack, which was when I was ten years old,

From this it appears that in more than nine tenths it begins during the third and fourth weeks of August. In one case the first of September is given, but inasmuch as the date of termination is "October," it seems probable that both periods are a good deal uncertain; it is therefore so marked in the table.

Time of That the commencement should vary is analogous with what we observe in other diseases, even those with a very definite course.¹ Eruptive diseases, typhoid fever, small-pox, and measles, manifest themselves in different individuals after different periods of exposure, and even after different intervals of time from exposure. In New England the summer of 1872 was remarkable for the heat in June and August, its frequent rains and luxuriant vegetation. The disease in most persons appeared about four days earlier than usual. In 1875, at Chicago, the attack with several persons commenced five days later than usual. We shall be still more inclined to admit this variation when we consider the many causes which are known to be excitants of single paroxysms.

§ 16. The times of attack have been examined with reference to geographic or rather climatic relations, but the evidence is not sufficient either in exactness or in

commenced about August 15th, about the time the pollen appeared on the male flower of the Indian corn (maize). It was aggravated when cutting the stalks of the maize in the first week in September."

¹ Case 10. Author. — The dates of the attack in my own case, are for several years in Cambridge, Mass., as follows:—

- 1842. August 19.
- 1843. August 20.
- 1844. August 18.
- 1845. August 16.
- 1846. August 16.
- 1847. August 18.
- 1853. August 14, itching in nose and ears; 21st, fully formed.
- 1856. August 19.
- 1858. August 21.
- 1863. August 20.
- 1865. August 13 slight; 20th, fully formed.

amount to draw any reliable inferences. Case 75, Mrs. S. B., and Case 4, Mr. T. H. Farnham, live near Philadelphia. The vegetation generally is two or three weeks in advance of Boston,¹ and the difference of mean temperature of the two places for the months of June, July, and August about 7°.² The time of attack for Case 75

¹ *Time of flowering of the Peach, Cherry, and Apple, in Maryland, Pennsylvania, and Massachusetts, for three years ("U. S. Agricultural Report")*:—

1840.

	PEACH.	CHERRY.	APPLE.
Baltimore, Md.	April 5.	April 5.	April 24.
Paradise, Lancaster Co., Pa. .	April 16.	April 12.	April 22.
Cambridge, Mass.	April 25.	April 25.	May 4.

1842.

	PEACH.	CHERRY.	APPLE.
Baltimore, Md.	March 20.	March 25.	April 1-10.
Newtown, Pa.	March 27.	—	—
Cambridge, Mass.	April 23.	April 22.	May 8.

1844.

	PEACH.	CHERRY.	APPLE.
Baltimore, Md.	April 16.	April 12.	April 15.
Philadelphia, Pa.	April 8.	April 11.	April 14.
Cambridge, Mass.	April 27-30.	April 27-30.	May 4-12.

² *The Mean Temperature in Worcester, Mass., and Philadelphia, Pa., in June, July, and August, for 1865 and 1866. Worcester is about 2° 30' north of Philadelphia.*

1865.

	JUNE.	JULY.	AUGUST.
Philadelphia	77.3	78.3	75.9
Worcester	70.5	70.5	69.4

is stated to be August 19th or 20th,¹ and for Case 4 about 23d or 24th,²—the same date as that of the majority of sufferers in Massachusetts. It may be, however, that the plants, the flowering of which is best known, may not flower at the same time with those upon which the disease may depend; it would be unsafe, there-

1866.

	JUNE.	JULY.	AUGUST.
Philadelphia	73.7	80.7	72.6
Worcester	66.	73.7	65.

¹ Case 75. — "My catarrh comes upon me annually in the night, between the 19th and 20th of August."

Miss E. E. B. — 1872 remained in Georgia till August 1st quite well, and arrived at the Twin Mountain House August 15th, having no symptoms *en route*, and remained well to this date, September 13th.

² Case 4. — "I have for the past eight or ten years spent my summer in Beverly, about sixteen miles above Philadelphia, on the opposite side of the river, going to the city daily. I have had catarrh since I was four years old. It commences about the 23d or 24th of August, sometimes perhaps a day or two sooner."

G. B. A., Esq., Philadelphia, gives me the following dates of the time of attack at the places mentioned:—

- 1856. August 25 . . . at Harrisburg, Pa.
- 1857. August 30 . . . at Memphis, Tenn.
- 1858. August 16 . . . at Memphis, Tenn.
- 1859. August 11 . . . at Harrisburg, Pa.
- 1860. August 15 . . . at Chambersburg and Hagerstown, Md.
- 1861. August 15 . . . at Chambersburg and Hagerstown, Md.
- 1862. August 11-24 . . . at Chambersburg and Hagerstown, Md.
- 1863. September 1 . . . at Chambersburg and Hagerstown, Md.
August 15, attacked with dysentery, had
catarrh immediately on recovery.
- 1864. August 13-20 . . . at Shippensburg, Pa.
- 1865. August 20-25 . . . at Chicago, Ill.
- 1866. August 15-20 . . . at Chicago, Ill.
- 1867. August 25 . . . at Buffalo, N. Y.
- 1868. August 29 . . . at Buffalo, N. Y.
- 1869. August 23-24 . . . at Buffalo, N. Y.
- 1870. August 20 . . . at Buffalo, N. Y.
- 1871. August 13 . . . at Detroit, Mich.
- 1872. August 20 . . . at Buffalo.
- 1873. August 23 . . . at Philadelphia.

fore, on these grounds alone, to infer that it has no relation to vegetation. But there are other cases which are not so easily disposed of. If the disease depends upon the flowering of the same plant, it is difficult to understand why the date of attack should not bear a close relation to the condition of vegetation generally. The temperature in the southern cities is higher, and vegetation is earlier than at the North, and yet Mr. G. B. A. was attacked no earlier—in one instance some days later—at Memphis, Tennessee, in latitude 35° , than at the cities on the great lakes in latitude 45° . A lady in Georgia was quite well August 1st: she arrived in the White Mountains August 15th, also quite well, and so remained. Now it would seem she ought to have passed through a belt of vegetation including the supposed cause of disease.

In some cases it would appear that after an absence from a catarrhal region during the greater part of the usual critical period, a return to this region is followed by an attack lasting beyond the usual time.¹

§ 17. The manner of the first attack varies. With some it is as severe as any subsequent one, and as sudden in its onset.² In other cases the attacks are gradually developed for several successive years, increasing regularly in the severity of a single group of symptoms or several groups.³

¹ E. D. McC. — Is usually attacked in the middle of August and continues ill three or four weeks. August 1, 1871, he sailed from America for Switzerland and returned to New York, October 1st; on the day of his arrival he was attacked with catarrh, which ran its usual course as to time and severity. In 1872 he sailed again, July 20th, for England and Norway, and was quite well during his absence. He returned to New York October 12th, and was again attacked on landing.

² Case 10. Author. — My first attack was in 1833, the year I was graduated at Harvard College; my second attack was when acting as an engineer in the construction of the eastern portion of the Boston and Albany Railroad. These two attacks were complete in all their stages, and as severe as the subsequent ones. The disease seems to have come upon me in all its force.

³ Case 23. E. S. Dixwell, Esq., of Cambridge. — "In 1848-50, I dis-

The head first suffers, and not unfrequently the inference of the sufferer is that he is having an unusual cold in the head at an unusual time ; and it is not until the disease has increased in severity after a few successive returns, that he is aware of what has befallen him. Indeed, in some instances it gradually develops asthma in a severe form, and the patient applies for medical advice without the least knowledge of the true nature of the malady. The exacerbation in the railway train is so constant, that the disease is usually attributed to an ordinary cold taken in the train by an open window, increased by the dust and smoke, or to some other equally accidental cause.

cover by examination of my diary only that each year I complained in August and September of weak eyes ; in 1849, it was accompanied by herpes zoster, and carbuncles. In 1853, my next entry, I was on a journey to Niagara Falls, in August, from 5th to 15th, and suffered from catarrh in part produced by irritation of the dust and cinders on the road. Afterwards I was in New York city, and took one sixth grain of morphine for catarrh without marked effect. In 1854 I was at the ocean side in July and August, returning to Cambridge August 12th, and experienced catarrh there slightly. In 1857 my diary speaks of ' Hay Cold ' as a recognized matter of experience. I was feeling very badly. Visited Gloucester at the ocean side with my brother, who was suffering as well as I. We were spoken to by the conductor of the railway train in sympathy because he had it too, and discussed the oddness of the disease and its prostrating effects."

This case, with the two following, illustrate the gradual manner in which it sometimes makes its first attacks.

Case 51. — " At the age of about twenty-five I began to observe that I caught cold, as I supposed, more easily in the latter part of summer and early autumn than at any other season of the year. This continued till about ten years ago without any marked change in my symptoms, and in the mean time I had resided in Central New York, New York city, and southern Ohio. On removing to Worcester County, Mass., my symptoms became more aggravated from year to year, and asthma, inflammation of the eyes, and what resembled influenza in its form, were added. Not till about seven years ago (after suffering about twenty-five years) did I learn what my real trouble was, or what to do for it."

Case 26. Joseph Peabody, Esq., of Salem, Mass. — Was first attacked in 1865, the last week in August, after a railway journey. The trouble was then supposed to be caused by the dust and smoke of the train.

§ 18. The disease may be divided into three stages. Some think they notice four stages — the first being a stage of incubation or development. But this is so rare and slight that it cannot be said to be proved.¹ It would be difficult to demonstrate it except by the accumulation of a considerable number of cases, because of the variations in the time of appearance of the disease, and of the approach of the separate stages. 87

The three stages may with propriety be termed *catarrhal*, *bronchial*, and *spasmodic*.

The first, the catarrhal, affects the eyes and nose, producing the profuse watery discharge, and also the ears and throat.

The second, the bronchial, affects the air tubes, producing cough, with more or less expectoration.

The third, the spasmodic stage, exhibits itself in the violent spasmodic cough, and the asthma, which is also most frequently spasmodic.

It is not to be understood that of these stages the groups of symptoms of each disappear before the succeeding stage comes on. They frequently run one into another, one or more stages overlapping. But the commencement of each is sufficiently distinct, even if it is added to those which precede, to attract the attention of the sufferer. Although all these stages are not necessarily gone through in each case, it must be admitted, after an examination of the table, page 39, that there is quite as great uniformity in this respect as is usually found in disease. That there may be something real in these stages, depending upon a regular succession of annual influences during the critical period, seems probable. See note 2, p. 89.

¹ See note 1, page 30, for a description of a development stage.

Case 3. John J. Dixwell, Esq. — "The affection of the eyes in one year preceded by three weeks the more decided symptoms of catarrh, the eyelids becoming glutinous and uncomfortable."

§ 19. *Catarrhal Stage.* The approach of this stage is sufficiently distinct to warn the experienced sufferer of what is before him.¹ When it has once appeared, the consequences are certain for the whole period. Those who have had successive attacks prepare themselves for the storm.² They take refuge in places of safety, or arrange their affairs for the coming annoyances and disability.

The symptoms of this group vary in severity and in length; they not unfrequently extend throughout the whole disease, but in a diminished form.³ Generally the profuse discharge from the nose and eyes diminishes as the next stage appears, and becomes thicker and less irritating to the skin of the nose and to the upper lip. The itching gradually lessens. The inflammation of the eyelids comes on, if at all, towards the end of this stage, or sometimes later, when small abscesses occasionally form on them.

The febrile paroxysms and the headache do not usually appear at first — nor till this stage is fully formed.⁴ They

¹ Rev. Henry Ward Beecher. — "The attack often in the beginning comes on so suddenly that whereas at tea I am entirely well, in ten minutes after I am deluged with tears and flowings at the nose. In other seasons the inception is more gradual."

Daniel Webster. — "The enemy may come as a thief in the night, or he may be as bold as a lion." — *Correspondence*, vol. ii. p. 463.

² Daniel Webster. — "*Franklin, N. H.*, August 10, 1851. I came to these regions on the morning of Thursday the 7th, thinking that the mountain air might strengthen me against the time when I expect my enemy, the catarrh, to attack me."

³ *Case 1.* — "The discharge from the nostrils continues up to the very end of the attack, which is at the beginning of cold or coldish weather, say the first slight frost; but the discharge is most severe about the middle of the disease."

⁴ *Case 20.* W. H. Y. Hackett, Esq. — "This year (1866) I was attacked August 23d. It begins with sneezing, itching of the eyes, and running at the nose. In a few days I have the symptoms of fever, a high pulse, hot palms, and sense of pressure upon the lungs. For a month I am unfit for business. I am a lawyer, and have on several occasions had to give over the trial of a case after it was opened."

are most decided in the afternoon, or in the evening. At this time inability to work, mentally or physically, and the general feeling of being "used up" is most marked.

The nasal symptoms have their daily exacerbations depending upon the hour, or some internal causes.¹ They are most severe in the morning on first arising, or before the first meal, materially interfering with its enjoyment and sometimes actually preventing it by the difficulty of swallowing. Besides this, there are certain external injurious influences. If there is dust or smoke, they are sure to prove a source of trouble. If the victim gives way to the great desire to blow his nose, and clear it of what seems to be an obstruction, he has probably prepared himself for a half-hour or an hour of discomfort. Once blow the nose, and the blood is forced into the tissues, they are distended, and the obstruction is worse than ever. It is important, therefore, to avoid this, and allow the limpid fluid to flow out upon a handkerchief; the vessels are then quickly relieved, and the fit is sooner over.

The eyes also have their exacerbations. While the nostrils suffer most in the early morning, the eyes are most in trouble in the middle of the day, when the light is brightest; they are better on a cloudy day, or during an easterly wind. So soon as the eyes begin to be suffused, the irritation finds its way to the nose, and the two begin to suffer in concert. The reverse action is seldom seen.

The irritation of the throat and of the ears seem to have exciting causes of their own. They are most annoying, on the whole, soon after an attack of sneezing; then the desire for relief by rubbing the palate with the

¹ Case 73. Mrs. F. A. B. — "Paroxysms of catarrh begin about 4 P. M. I get a little sleep before 1 A. M., when I have a hard paroxysm which lasts sometimes two hours, sleep again and have another about 4 A. M., not usually so hard."

tongue, or by attempting to swallow, is almost irresistible.

This stage continues normally eight or ten days before the second stage is entered upon.¹ It may continue beyond this, and even throughout the disease, diminishing in severity as time passes. But it does not diminish by regular steps; it has its time of sudden relief for a short period, and as suddenly returns, raising hopes of a speedy recovery, that are not destined to be realized.

§ 20. *Bronchial Stage.* The bronchial stage begins about the end of the first week, or a little later; generally during the first two or three days in September.² It is then that a slight tickling or irritation at the top of the windpipe is felt, frequently accompanied by irritation of the throat, producing a slight hacking cough. This is felt only during the day, while the patient is moving about, and is more of an annoyance than a distress. It is without expectoration, or if any mucus is dislodged, it is in such small quantities that it is not thrown into the mouth. Though variable, it has no regular exacerbations. It would only be distinguished from a common cold on the chest by its irritative, tickling character.³

¹ *Case 26.* Joseph Peabody, Esq., Salem, Mass. — "In 1866 I was attacked August 26th with itching and watering of the eyes, inflammation and swelling of the lids, especially of the lower lids; difficulty of swallowing continued two weeks, and was followed with cough and asthmatic breathing which compelled me to sit up at night. The obstruction of the nostrils obliged me to breathe through the mouth, producing a hard, dry tongue. These troubles gradually subsided and disappeared during the last week in September."

Case 4. — "The disease begins with great itching and irritation of the eyes and running thereat; then sneezing and running at the nose, which lasts ten or fifteen days, when it settles on the chest; the throat is filled with phlegm, breathing very laborious and difficult, with asthma for another fortnight, finishing with bronchial irritation which continues much longer."

² *Case 45.* Dr. Anson Hooker's case. — "The cough and mucous expectoration does not come on till the attack has existed a fortnight or more."

³ *Case 16.* — For twelve years has three weeks of irritation of the eyes,

In a few days the cough becomes more constant and more annoying. The affection seems to have descended lower in the chest, and is attended with some pain. The first attempts at cough in the morning are now painful, with a tearing sensation beneath the breast-bone. Still, the expectoration is hardly to be noticed; it is transparent and without taste.

This stage is almost always accompanied with more or less of the symptoms of the first or catarrhal stage, and it is this combination which adds so much to the discomfort. The cough, however, is not increased by the other troubles, like the affections of the eye.

§ 21. *The Spasmodic Stage.* This first shows itself early in the third week, about the tenth of September.¹ The cough which up to this time had been frequent, but of an irregular character, begins to appear in paroxysms. These paroxysms may occur at any time in the day, but are much more certain to occur after the first sleep. On awaking with a dry mouth and obstructed nostrils, there is a little tickling of the throat, and then the paroxysm begins; the patient is obliged to sit up in his bed, or stand upright, and the attack frequently continues until, by the mechanical agitation of the stomach and nervous disturbance, retching is produced, and sometimes vomiting. Quiet then usually succeeds until morning, or until a fresh attack, which seldom occurs for some hours.

During the whole of this period the expectoration is scanty. A little glairy mucus or starch-like secretion is the only result of these violent efforts. Nor when obtained does this mucus give the relief got by expectora-

sneezing, inflammation of the mucous membrane of nostrils and throat, and then three weeks of bronchial cough with fever and copious night sweats, during which he has been greatly reduced in health and strength, so as to be confined to his bed, with a slight asthma, but not enough to prevent his lying down.

¹ Rev. Henry Ward Beecher. — "The third stage is known by the tendency of the whole complaint to descend. It seeks to become bronchial.

tion in an ordinary cold, or influenza. Obviously this is not the cause of the cough.

The muscles of the chest become sore from this violent action, and sometimes pain is felt in the intercostal spaces and along the margin of the ribs.

The spasmodic cough may be replaced, or accompanied by asthma.¹ Indeed, a slight wheezing, as though the bronchial tubes were slightly narrowed, not unfrequently accompanies the cough, even when there are no other signs of asthma, or with patients who never suffer from asthma throughout the whole course of the disease.

With some, from the beginning of the second stage, asthma is the most serious part of the disease, and in these cases it continues to the end. The attacks, like those of cough, are generally in the night on first lying down, or after the first sleep. If it has selected an hour for its invasion, it generally occurs at nearly the same hour during the remainder of the disease.²

The attack is frequently preceded by a copious flow

You are seized with spasmodic coughs. If you give way to them, they will leave you feeling as if a blunderbuss, loaded with shot, had been discharged through your lungs. A cough, like a breachy horse, should be ridden with snaffle (not snuffle) and curb, and never suffered to get under weigh, or to go faster than a walk. But it is not an unrelieved cough; for it alternates with asthma — a complaint in which a man feels, when asleep, as if some one was suffocating him with an unfair use of hemp; and when awake, as if the hemp grew inside of him, and he was trying with his breath to pull it up by the roots. Before you had busy days, but now you will have your chief occupation at night." — *New York Ledger*, September, 1868.

¹ Case 8. Daniel Webster. — "*September 28, 1857, Marshfield.* Sometimes the force of the catarrh seems pretty much broken, and then it returns, attacking the head, eyes, nose, etc., with great violence. I think it is approaching its last stage, which is the asthmatic stage. Some of our friends who are subjects of the complaint, and who have short necks, dread this."

² G. B. A. of Philadelphia, a severe sufferer from Autumnal Catarrh, had no asthma while living in Chicago, Detroit, and other cities on the great lakes, but on returning to Philadelphia asthma again appeared in full force.

from the nose and eyes. At other times it comes on without flow of any kind, — a dry difficult breathing, — compelling the sufferer to leave his bed for relief, or seek fresh air at the open window. In its character it does not differ from spasmodic asthma, coming on at other seasons of the year, or produced by other causes.

This also is the nervous stage, when there is irritability of the whole system, when little things annoy one, when sleep is disturbed, when the sufferer leaves his bed simply because he cannot stay in it.

The severity of the asthmatic attacks sometimes vary with the locality within the catarrhal regions, the other symptoms of the disease remaining the same. The cause of asthma seeming to depend, as in other forms not connected with catarrh, upon a variety of influences, the nature of which are not yet known.

As the last week in September¹ is approached all these symptoms are mitigated, and after a few days more disappear, not gradually and regularly, for that is not the character of the disease in any of its stages; but there are oscillations and intervals of rest from the annoyances, and these intervals become longer, and the attacks less severe, and so the whole disease vanishes. If, however, there is a succession of frosty nights, or one good black

¹ Case 8. Daniel Webster. — “*Marshfield, September 20, 1848.* I am so well to-day, and the weather is so fine, that if I get through the night without a paroxysm of catarrh, I mean to set the lark an example of early rising to-morrow, and listen to the ‘murmurs of the Atlantic surge’ before the sun fairly purples the east.” At other times it continued much longer. October 14, 1850, he says, “Tuesday, the 8th, I was to have gone into State Street to meet the people, but I did not find myself well enough. The next day (Wednesday) I came down to my home a good deal sick, and have hardly been out of doors from that day to this. My catarrh has held on unaccountably, and for three or four days last week I was quite ill with it, so much so that I called a physician.”

Case 22. — “The attack diminishes with the approach of cool, breezy weather, and generally gradually disappears during the latter part of September, but sometimes not till near the end of October.”

frost, the sufferer may, after a wretched early part of the night, awake in the morning entirely rid of his enemy.¹

¹ Case 57. Dr. Anson Hooker's case. — "The first good frost in October is a god-send to her; she is at once relieved."

Case 68. — "The affection of the nose and eyes, and the asthma continue until about the first of October, or one or more heavy frosts; the cough continues sometimes into November."

Mrs. S. D. P., a sufferer from catarrh (Case 76); states that her mother was also afflicted with the same disease until she was sixty-four. What was not a little remarkable, she was so sure that it ceased on the appearance of frost, that once finding herself suddenly relieved at two o'clock in the morning, immediately and confidently declared that there was a frost, which was true.

The Meteorological and Chronological Register by Leonard Hill of East Bridgewater, Mass., shows that for fifty-two years between 1806 and 1869, the average of the first frost noted was September 18th. The earliest frost in September was on the 8th, and the latest day without frost was October 3d.

The following dates for the first very noticeable early frosts in Framingham, Mass., twenty miles west of Boston, is from the *Boston Transcript*, 18 September, 1868:—

1857	September 29.
1858	September 25.
1859	September 16.
1860	September 29.
1861	October 22.
1862	_____.
1863	September 23.
1864	October 10.
1865	September 20, slight frost.
1866	September 24, hard frost.
1867	September 24.
1868	September 18.

"The lines marking the limit of mean single occurrence of frosts closing vegetation are most difficult to place, and they can only be regarded as approximations. A temperature of 36° to 40° at sunrise is usually attended with frost destructive to vegetation, the position of the thermometer being usually such as to represent less than the actual refrigeration at the open surface. Taking the point of 40° as that which would give a frost in districts slightly more elevated and exposed than the posts themselves (where the observations were made), as the adjacent country usually is, and the comparisons for the month of September through the last twelve years [1843-1854] gives the following results."

"A line separating or detaching the coast of New England south of

The evidence of the influence of frost is pretty complete. Persons who have changed their places of residence to others, where the frost appears at a different time, find their day of relief also changed in accordance with it.¹ It is not to be inferred from this that relief

Boston, New York below West Point, the southern part of Pennsylvania, and extending through southern Ohio to St. Louis and Fort Leavenworth, would divide the districts of the eastern United States, in which frosts might be expected in September, from those in which they would rarely or never occur in ~~this~~ month.

"The most southern points at which this measure of single extremes may occur, are at Baltimore, St. Louis, and Washington, and Forts Towson and Jessup, west of the Mississippi." See Lorin Blodget's *Climatology*, pp. 288, 289.

The line given above corresponds very well with that given by the cessation of Autumnal Catarrh. It is apparently not far from the southern line of the catarrhal region, as given on the map, which exhibits approximately our present knowledge of the extent of the disease. See p. 69.

¹ Case 43. G. H. H. — Born in Rockville, Md., thirty miles from Baltimore. Was first attacked when twenty-four years old, while living in Marietta, Ohio. Commenced August 28th. At first the whole disease ended in about four weeks; of late it has continued about eight weeks, beginning a little earlier, and lasting till October 20th, when frost occurs. Removed to St. Louis in 1864, since which time the attacks have been longer but less severe. Frost occurs in St. Louis later than in Marietta — about November 1st or a little earlier.

Miss E. E. B. — "1869, July 1st, I was at Lookout Mountain and in the valley of the Tennessee till August 7th; there had itching of the eyes and went to Oakland on the Pennsylvania Central Railroad. I began to have the usual symptoms August 15th; slight asthma began on 20th and 21st and continued till frost, early in September, when it all ceased; there were six or more other persons there, with whom it followed the same course. November 1st went home by sea to Savannah; no frost there as yet, and I experienced some oppression of breathing; could not lie down, but with frost, November 6th, was well. The following year I was at Halifax, N. S., from July 1st, going by sea to Portland. I was entirely free during the autumn. I was at home November 1st, and though no frost, I had no catarrh."

Case 65. — "The cold in the head and the cough cease, when I am in Philadelphia, with the first frost, about October 25th."

Mr. E. M. Smith, Rochester, N. Y. — "Attack commences August 1st. 1872 began three days earlier; it is accompanied by a sense of fullness and cracking through the forehead which lasts till frost — after a frost an annoying cough. The cessation of the headache with frost is singularly prompt.

does not occur until a frost, — it may occur earlier, — but the frost rarely fails to bring relief if it has not occurred before.¹

The period of relief is thus stated in eighty cases : —

During the last week in September	19
By the first of October	29
With the first frost	22
After first of October	10
	<hr/> 80

The first frost occurs generally by the last week in September ; the cessation of the disease in a large part of the cases is therefore nearly simultaneous with it.

The summer and autumn of 1872 were remarkable for heat and moisture favorable to vegetation. Plants ripened earlier, and frost did not come in September ; but the disease in New England disappeared before the first of October.

In 1868 I was in Aroostook County in Maine ; I was journeying in an open wagon. When I went to bed I had all the bad symptoms in the head ; in the morning I was well, and then learned that there was a frost in the night."

Miss E. E. B., Washington, Wilkes County, Ga. — "In 1868, August 20th, severe asthma began ; obliged to sit up at night ; had a paroxysmal cough rendering the muscles along the margin of the ribs painful. I remained at home during the whole of this period ; it ceased with destructive frost, October 20th — the usual time when such frosts occur with us. The irritation of the throat and occasional attacks of sneezing continued through the winter."

¹ Case 69. — Miss E. W. thinks there is no connection in her case between the cessation of the symptoms and the appearance of frost. They sometimes cease before frost.

GEOGRAPHIC AND CHOROGRAPHIC RELATIONS.

§ 22. NOTHING connected with this singular disease is more interesting than its relations to large tracts of territory or to places of less extent having a certain elevation above the sea level. In some of these places it can be shown conclusively that it exists, and in others, as conclusively, that it does not exist. In investigating these relations it is obvious that the number of facts should be large, while it is equally obvious that the small number, comparatively, of persons liable to the disease, adds greatly to the difficulty of obtaining these facts; for none others than sufferers are competent witnesses, and these for only about one month in the year; none others are *catarrhoscopic*.

It is obviously of the first importance that other diseases than Autumnal Catarrh be not mistaken for it, — a mistake more easily made than would be generally supposed. Bronchitis, especially chronic bronchitis with annual attacks of greater severity than usual, chronic catarrh with similar aggravations, and asthma manifestly dependent upon other causes than that producing the disease now in hand, have all at one time or another been mistaken for it, and their victims disappointed in their hopes of relief.

The evidence as to some places is sufficient; with regard to others we have the result of two or three cases only. The conclusions drawn from these cases, therefore, must be deemed probable only.

Still it is certainly remarkable that in those places where even a single well marked case is relieved, the sub-

sequent experience of numbers has seldom shown a complete failure.

First, as to the occurrence of this disease in other countries than the United States. The "June Cold" was for a long time supposed to be confined to Great Britain; it is now said to exist in France, Holland, Belgium, Russia, Switzerland, and Italy, assuming that its identity is proved when it appears in these different countries at the same season, and with the same symptoms as in Great Britain. But in a disease in which, as we shall see farther on, the predisposition of the individual plays such a prominent part, a stricter line of inquiry seems to be necessary; for this reason we have, as above stated, required the experience of the same person as to the influence of different countries.

We have facts sufficient to show that persons suffering from Autumnal Catarrh here do not suffer at the same season and in a similar manner in some other countries.

§ 23. *Great Britain.* The evidence is distinct with regard to several places in England. Subjects of the disease here, have been in Liverpool, in Manchester, and in London, at the critical period, and have, with one exception, entirely escaped.¹ In this case the trouble was very slight.²

¹ *Case 35.* — Who had suffered from early youth till sixty-five years of age, escaped the disease in England. He was much relieved at Long Branch, although it reappeared on his return home after a two weeks' stay at this sea-side resort.

Case 38. — Is twenty-one years old; has lived on the Hudson River, and has had Autumnal Catarrh annually since five years old, except in August and September, 1858, when in the vicinity of Manchester, England, in 1859, in Aberdeenshire, near Balmoral, and in 1862, when in Halifax, N. S., or on the water, between Halifax and New York.

Case 48. — "In 1866, left New York, July 21st, for England and Scot-

² Mr. C. was in England and had a slight attack at Kenilworth and Warwick; was there three days; it ceased on leaving Liverpool for America, September 2d. In 1871 was in England, Scotland, and Ireland, and perceived the presence of his disease till he was out of sight of land.

In *Scotland*, at Balmoral and Stirling, and in various parts of the Highlands and on the lakes, the travelers saw no signs of their enemy.¹

France. This country has also been a place of safety. There is no evidence of a catarrhal affection at the critical period either in Paris or in the country.²

land. I had no attack that year, nor the following year; but at the period it annually occurred a feeling of numbness about the head, giving the idea of suppression, which disappeared with the appearance of frost. In 1869, again in Europe, without evidence of Autumnal Catarrh."

Case 74. Miss A. C. B. — Was in the British Isles and in France during the summer and early autumn of 1870. "I entirely escaped it for the first time in my life. I went to Europe in April (the 22d I think), and did not sail from there till October 6th, which, of course, was beyond its date of continuance. I spent all the time in the British Isles, except a fortnight in Paris, but I was in the British Isles through its usual time."

¹ Case 8. Daniel Webster. — He was in Scotland in August and September, 1839. The weather was cold, damp, and often rainy. He was present at Lord Eglintoun's "Tournament," where everything was spoiled by the rain, and yet he had no "cold" of any kind, — the only season he escaped it from its commencement in 1832 to the time of his death, twenty years after.

Author. — I was with my son in the Highlands of Scotland in 1869, during August and September, and although it was very dry and dusty, we neither of us experienced any inconvenience.

Case 4. — "I was never free from it for a whole season, until 1856, when I was in the Highlands of Scotland."

Mr. P. left New York in May, 1871; from August 1st to 10th he was in Belgium, on the 12th in Edinburgh and from the 12th to 22d in Scotland in the County of Forfarshire shooting on the moors; then at Leamington, Warwick, and Kenilworth; during the whole period quite free.

² Case 74. — After suffering from catarrh twenty-one years, in 1866 she went to Europe, and August 20th "was traveling from Berne to Paris. She sailed from Liverpool September 6th, and arrived in New York about the 16th. She was well during the whole period of her absence. Catarrh commenced on the day of arrival in New York, not gradually, but appeared in full force, as it would have been at that time had she remained at home."

J. E. of Boston was well in Switzerland and Northern Italy.

Case 37. Frank B. Fay, Esq., of Chelsea, Mass. — "In 1858 I was in Europe. Left Paris about June 15th, traveled through Italy, Germany, and Switzerland, returning to Paris August 15th. I remained there three weeks, and went thence through England, Ireland, and Scotland, reaching my home in the United States, October 20th. During this year I had no

Switzerland is free from catarrhal influences — in the Tyrol, at Dole, and Geneva, and the country between.¹

Germany, Sweden, and Norway were visited with safety by persons suffering from the disease here.²

In most cases, the persons traveling in the countries just mentioned at the critical time of the year, were natives of the United States, but in one instance the Autumnal Catarrh. This is the only year I have escaped, although I think I have not had it as severely since. During the War of the Rebellion, I was in Virginia and Maryland, in August 1862 and 1864; I had it as usual."

¹ Case 1. — "In 1855 I was in Europe, and left Paris for Switzerland at about the period of the attack. After riding all day in the diligence from Dole to Geneva over a dry, dusty, limestone country, I arrived at Geneva in bad condition. All the next day I remained in my hotel taking laxative medicines, and on the following morning started for Chamouni. My troubles left me forthwith, and I had no more trouble that year."

Rev. P. A. Jay of Fairhaven, Conn. — "In 1856 I spent the time of attack at Interlaken, Switzerland, entirely free. In 1871 I was at St. Moritz, 7,100 feet above the sea, drinking the iron waters, entirely free, and felt better all succeeding year."

Case 2. Rev. H. W. Beecher. — "The two summers that I visited Europe, I was entirely free from it. During the week that it was due in 1863, I was in the Tyrol. On the 17th of August it came, knocked, and looked in upon me, but did not stop. There was a single hour of mild but unmistakable symptoms, but only one."

Case. 50. — Prof. Jeffries Wyman was on the Continent in 1870, without any evidence of the disease.

Case 23. E. S. Dixwell, Esq. — "In 1867 the period of usual attack of catarrh was spent in Switzerland without any appearance of the disease."

² Case 12. — Born in Germany, had suffered fifteen years in America, went to Europe, sailing August 5, 1860, and was in England, France, and Germany, but not on high land, for three months, including the entire period, and had no catarrh.

Mr. F. D. A. had the disease annually for ten years, but while in Germany two years had nothing of it.

Mr. Atkins passed the year of 1873 in Sweden and Norway with entire exemption.

Mrs. B. of Medford, Mass., had catarrh before reaching Paris. Miss G. of Pittsfield, Mass., has been a subject many years in succession except in 1868 in Paris. August 20th was in Antwerp, and had a slight attack for two or three days, but it ceased on arriving in Paris.

1871 I was with my son in Belgium, Germany, Switzerland, France, and England during the months of August and September and we were both quite well.

traveler was a native of Germany, who had suffered fifteen years in the United States and was quite free in his native land. He was again attacked on his return to the United States.

It may be assumed, therefore, with a good degree of certainty, that the Autumnal Catarrh of the northern portion of the United States does not exist in Great Britain, nor in those countries on the Continent above mentioned. To this we may add, that although Dr. Phœbus¹ makes mention of asthmatic and catarrhal attacks occurring in these countries annually, at other seasons than early summer, he makes no mention of a regularly recurring catarrh in September. He gives the average duration of the June Cold as about eight weeks.

In *India* we have but one instance, that of a lady; she was well in Manilla or Batavia, but thinks she had a very slight trouble somewhat similar in Macao.²

§ 24. *United States.* We have already stated that the disease does not exist over the whole United States. It is a matter of difficulty to give the exact limits, the number of cases not being sufficient for that purpose. We can, however, arrive at proximate results which further observations may render more definite. We have no other evidence of its non-existence in the indicated places than this, that certain persons who have suffered elsewhere have ceased to suffer on removing to them.

A point which leads to misconception is the possibility and perhaps probability, that places on or near the limit may be so far influenced by the particular season as to be thrown to the one side or the other of the dividing line.

We must remember, also, that the determination of these lines may vary according as we select for our *catarrhoscope* one already suffering when he passes them,

¹ *Frühsommer-Katarrh*, pp. 65, 170.

² *Case 75.* — "Was also well in Manilla or Batavia, but thinks she had something resembling asthma without cough while in Macao."

or one who has passed them before the critical period. It may require a longer time and different conditions to arrest a disease already in progress than are required for its prevention. Again, sensitiveness to the causes of catarrh may vary somewhat in the same person in different seasons; this variation, however, is slight so far as our facts go.

With these disturbing elements in mind, we proceed to give the probable limits of the catarrhal territory.

Beginning at the southeast, we may say that it extends along the Atlantic coast, which is everywhere low, from the capes of Virginia in latitude 27° N., northeastward as far as Eastport, Maine, latitude 45° .¹ It cannot be traced into the white pine lands beyond the St. Croix River.² The evidence is sufficient to exclude it from New Brunswick, Nova Scotia,³ and along the coast as far as Labrador,⁴ beyond which we have no facts.

¹ Much evidence of the existence of the disease along the Atlantic coast has already been brought forward in the preceding sections. We shall have still more in the section which follows on the influence of the sea-side.

² *Case 36.* Henry G. Fay, Esq., Brookline, Mass.—“I left Boston September 3, 1867, for Calais, Me., going by the way of Portland, Machias, and Eastport. My trip by rail was severe. I suffered terribly all the way to Portland. I went on board the steamer at night, and left the wharf at 11 P. M. for Machias. Although I had been so badly stuffed up in the nostrils all day, I slept comparatively well, and the next day, being still on the water, was comparatively well. I went to Eastport, Calais, and Houlton, Maine. A smart frost occurred on two successive nights while I was in Calais in the middle of September, upon which the catarrh ‘stepped out,’ and I had no more trouble. I have found no relief at Centre Harbor, nor at North Conway.”

³ *Case 44.* James T. Hodge, Esq., Plymouth, Mass.—“In the summer of 1863 I was employed in Nova Scotia, and was a great deal upon the coast. On the 27th of August, the date of its annual return, at Cheticamp, on the coast of Cape Breton, I happened to be helping to get in some newly-cut hay to save it from a coming shower. No symptom of the asthma appeared then, nor did any appear until, on my return, six weeks afterwards, I began to sneeze in the train on my way from Boston to Plymouth.”

A New York gentleman who had suffered many years, escaped while in St. John, New Brunswick.

⁴ A young man from Portsmouth, N. H., suffered while at the Isle of

From the St. Croix, south of Houlton in Maine,¹ or about the line of six hundred feet elevation above the sea level, the line of exclusion turns eastward, following, approximately, the border of the elevation just mentioned, excluding the interior lakes of Maine, which are about one thousand feet above the sea, and descending towards the south, strikes the White Mountain region at its northern portion. Thence, turning towards the St. Lawrence River and running along the height of land which divides the waters falling into the Atlantic from those falling into the St. Lawrence, parallel to the St. Lawrence, strikes that river north of Lake Champlain.

Although we have evidence of the existence of the

Shoals, and at Conway, N. H. For two years he entirely escaped on the coast of Labrador.

W. R. of Bellows Falls, Vt., in 1875 was in Canada East, at Tadousac, at the mouth of the Saguenay River, and thought himself better than at the White Mountains.

Dr. E. J. Marsh, Paterson, N. J. — "In 1871 I was, during the critical period, in St. John, N. B., Fredricton, and St. Andrew, quite well, but leaving St. John and arriving in Boston, September 22d, I was attacked with asthma, which did not disappear till the first week in October. A lady escaped two successive years at Tadousac." e/

Colonel George T. Towle, United States Army. — "In 1852 was at sea and on the coast of Labrador until September 1st, and had no sign of it until returning to New Hampshire in the same month."

¹ Case 47. — No relief at sea-shore; slight relief at Augusta, Maine; entire relief at Lake Umbagog, in 1860; at East Andover, twenty-five miles north from Lake Memphremagog, in 1862; at Littleton, near White Mountains, in 1866, in twenty-four hours after a hard ride in the cars; 1867-69, at Whitefield, at Mr. Dodge's, two miles towards Lancaster. "1870. I have been in camp in the eastern part of Maine and western part of New Brunswick, about fifty miles northeast and northwest of Calais, Maine, at the head of Passamaquoddy Bay, moving about from place to place, not in the vicinity of any settlement, and have been quite well. In 1863-65 I was in Cambridge, and suffered severely each year."

Mrs. Burpee, of Ohio, suffered in that State from catarrh in August and September, returning regularly each year, but on removing to Halifax, N. S., it ceased so long as she was in the city. In the country she has it slightly.

disease at St. Catharines, eleven miles from Niagara Falls, a single case at Toronto, at Port Hope near Coburg, on the northern shore of Lake Ontario, and slightly at Murray Bay, on the St. Lawrence, the cases given indicate that it is not found generally in Canada.¹ It may be on the immediate northern shore of the lower great lakes, and between Lake Ontario and Lake Erie, but that the line of exclusion runs quite up to the southern border of the great lakes is clear, and along it to the south of the island of Mackinaw, between Lakes Huron and Michigan, in latitude 45° 51' N.²

¹ Mr. P. informs me that a gentleman who had suffered six years, found relief in Montreal.

Case 40. — Left Glen House September 8th, after having been there a few days quite well, and went to Quebec, where he was also well.

Case 25. — Henry Rice, Esq., of Boston, was at Montreal, where he suffered slightly.

Mr. R., whose case is recorded as No. 73, states that two other gentlemen from Boston were relieved at Montreal.

Case 41. — Was well at Montreal.

Case 11. — Mr. E. F. Atkins passed along the northern shore of the great lakes, on the Great Western Railway of Canada, during the critical period, without any evidence of catarrh until he reached Albany, New York.

“Dr. Tupper says it is not found east of the St. Croix River.”

² *Case 26.* Joseph Peabody, Esq. — Was at Mackinaw, and was quite well at the Mission House, 120 feet above the lake, 700 feet above sea level. He suffered as usual at St. Catharines, four miles from Lake Erie, towards Niagara. Mr. Peabody informs me that a jurist from Chicago who suffered severely there, and also at St. Paul, Minnesota, got complete relief at the island of Mackinaw. Many others have been at Mackinaw with relief, even when it was active on arrival there. The island of Mackinaw is in the straits connecting Lakes Huron and Michigan. It is about nine miles in circumference, and rises on its eastern and southern shore in abrupt rocky cliffs, the highest point being about 250 feet above the lake. The fort is 150 feet above the lake, and 728 feet above the level of the ocean. There was formerly a missionary station here. It is now occupied as a hotel. It is upon a high bluff which faces the south. The air is cool and the vegetation scanty. For the climate of St. Paul, see Blodget's *Climatology of the United States*, p. 73.

The following card confirms the above statement. I have satisfactory evidence that the disease here called “Hay Fever” is really Autumnal Catarrh.

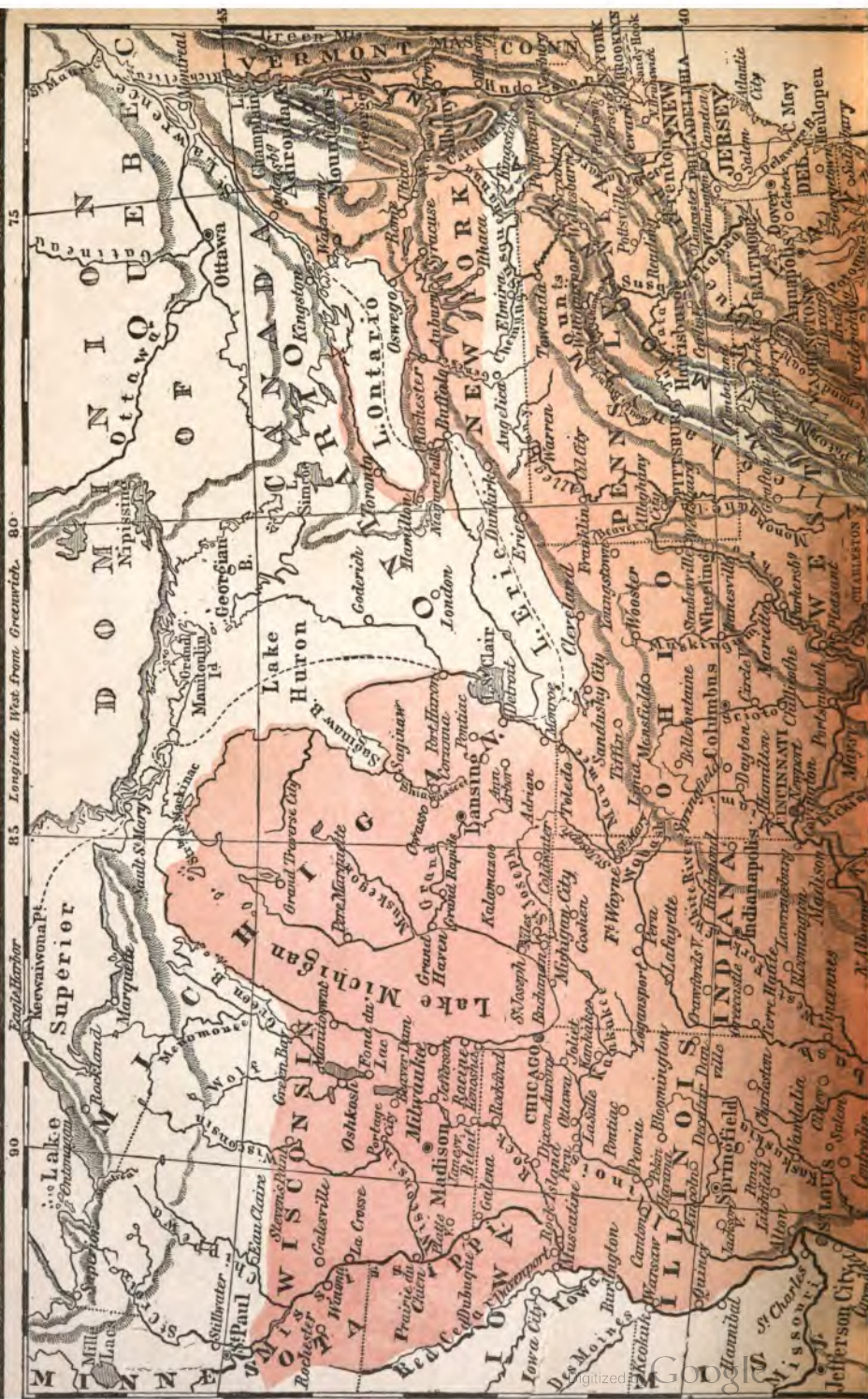
By A. Guyot

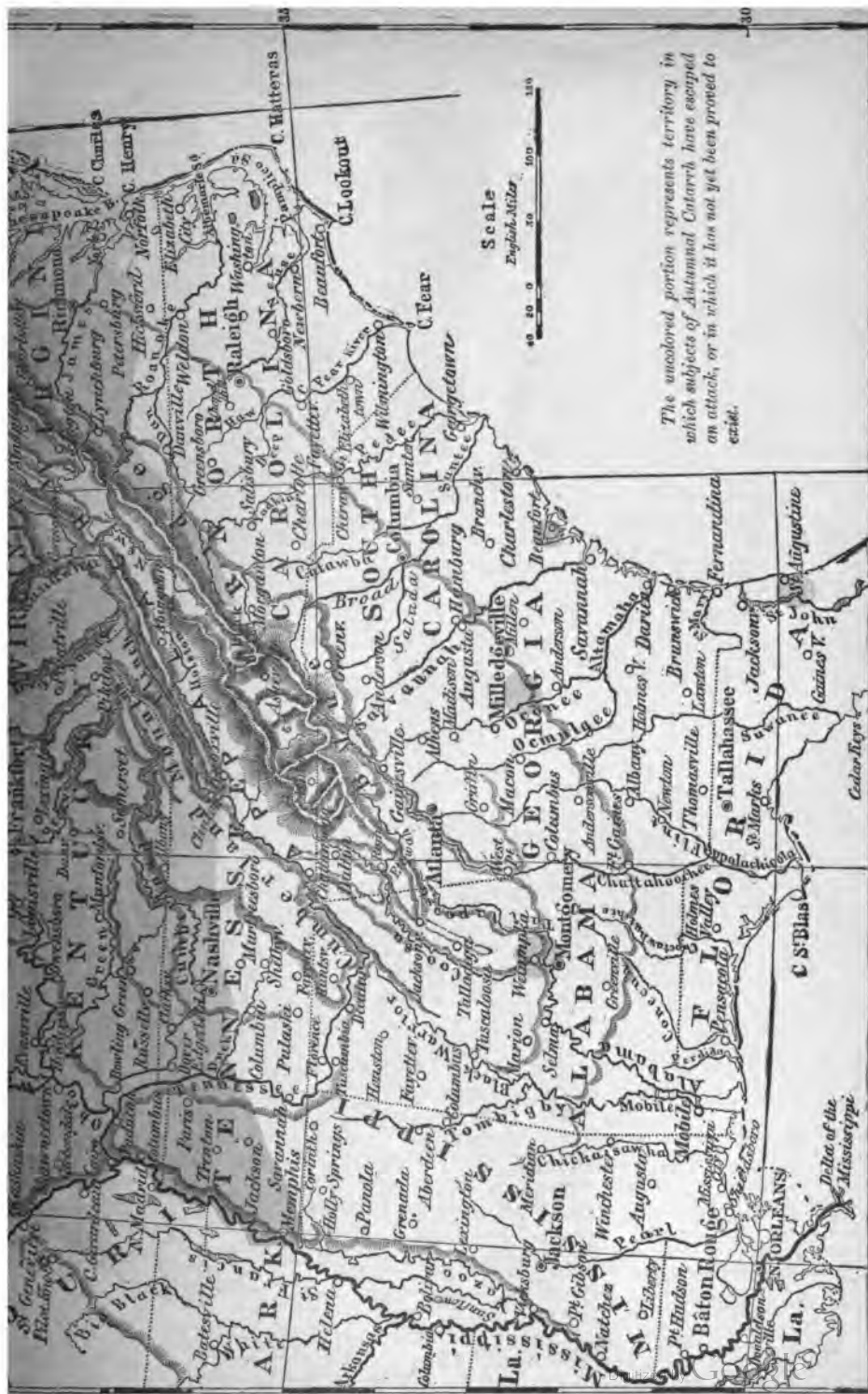
Physical and Political.

By A. Guyot

By A. Guyot

Eastern Part.





It then crosses the lake and runs north of Lake Winnebago to St. Paul, Minnesota, at the junction of the St. Croix with the Mississippi in latitude 45°,¹ leaving the Lake Superior copper regions beyond its influence.²

"The undersigned, having themselves or in their families long been afflicted with that peculiar disease known as 'Hay Fever,' and having tried in vain the various prescriptions of many physicians, desire to testify for the benefit of sufferers from this disease, that we have entire immunity on this island of Mackinaw, Michigan. We find here many from different sections of the country of both sexes, and various ages, who have sought refuge from their annual August attack, and in not a single instance have they been afflicted here, — and some who have arrived here with the fever, were entirely free after a day or two. Knowing that there are numerous victims of this disease throughout the country, we think we discharge a simple duty when we thus make known a certain cure. The hotels here afford ample accommodations at reasonable rates, and the beauty of the island in its scenery, both of land and water, the delicious and invigorating air, together with its rambles in the woods, make it a delightful place of summer resort."

GRANT GOODRICH, Chicago.

HENRY CHAMBERLAIN, Three Oaks, Mich.

HENRY W. KING, Chicago.

C. G. HAMMOND, Chicago.

"MACKINAW, Mich., August 29, 1871."

¹ Case 9. Robert F. Fiske, Esq., St. Paul, Minn. — "Since I have been in St. Paul I have not known anything about an 'autumn cold,' such as I knew it at the East. At the East I suffered intensely from inflammation of the eyes, which inflammation extended all through that region of the head. I have not had anything of the kind here. At the East, usually for one full month, I was unfit for any duty, but now I am able to accomplish a full day's work every day, from the 1st day of August to the 1st of October.

"In my judgment a person coming here merely to avoid having the cold at the usual time, would not wholly escape. I was East during the summer of 1859, and on my return reached home about the 20th of August, and brought back with me enough of the eastern influence to give me some trouble for two or three weeks."

² Case 74. — "I spent the last summer near Hancock, Portage Lake, Michigan, in the copper region. My cold comes on usually August 20th, almost to a day. I had no sign of it while there. I left August 26th, went by steamer to Marquette, by railroad to Esconaba, by steamer to Green Bay, and by rail again to Chicago. Sunday, August 29th, I left Green Bay, in the afternoon, and in two hours from that time I was com-

It may be inferred that this must be near the border of the non-catarrhal region, inasmuch as Colonel Towle did not escape it in Sibley County, which is a little to the southwest of St Paul.¹

From the Mississippi westward, we have but little evidence compared with the immense territory between it and the Pacific Ocean. Several persons have suffered at Denver, more than 5,000 feet above the sea, and at Colorado Springs, at about the same elevation. James T. Hodge had the complaint for ten days before leaving Massachusetts,² and also suffered several days after arriving

pletely in the clutches of the enemy. The cold was very severe only a week or so, but after that it came on at irregular and unaccountable intervals till October 1st." She was then in St. Louis, Missouri.

A gentleman from Milwaukee found relief in the copper region.

Rev. Peter A. Jay writes: "I have a brother-in-law at Chicago, who is free from his attack at Marquette, on Lake Superior.

Case 67. Mrs. D. — Was one year in the Lake Superior region, when the attack was shorter and much less severe than during the nine other years in Massachusetts.

Dr. E. J. Marsh, Paterson, N. J. — "In 1869 I was in San Francisco, Cal., and in the Coast Range of mountains. During the critical period, from September 1st, I was at Camp Wright, Mendocino County, 200 miles north of San Francisco. No disease."

Case 29. — Lived in Somerville, Mass., near Boston, and there suffered many years from unmistakable catarrh, from the last week in August to the last week in September. For several years in succession, during August and September, he was at Muscatine, Iowa, on the west bank of the Mississippi, at an elevation of 586 feet above the ocean. During these years he entirely escaped an attack, but on returning to his home, he was again attacked at the usual time, but less severely.

¹ Colonel George T. Towle, United States Army. — "I was in Sibley County, Minn., and did not escape it."

² *Case 44.* James T. Hodge, Esq., Plymouth, Mass. — "In 1870 I left Plymouth, September 5th, after having had the complaint about ten days, and was at Golden City, Colorado, at the base of the mountain, at about 6,300 feet elevation, on the 11th. I found no relief from it on the way to Colorado, and it continued apparently unabated for several days after I had been in the Territory, at altitudes of 5,000 to 6,500 feet above the sea level. In the course of a week, however, it had very sensibly diminished, and soon disappeared. I was gone till the middle of October, and dur-

at Golden City, Colorado, at an altitude of about 6,300 feet. We have testimony that General Halleck did not

ing my absence had occasion to travel over a good deal of mountainous country as far west as Utah, as high, I believe, as 10,000 feet above tide. I was entirely well, and have had no return of 'Hay Fever' since my return home, October 15th. I was surprised I should have had the complaint a week after reaching the mountains in Colorado.

"In the spring of 1865 I went to Montana, and for three successive seasons I escaped the disease. My wife was with me last year, and also escaped. We lived in a fine dry climate, at an altitude of 5,000 feet or more above the sea. The air was more delightful to breathe than I ever experienced elsewhere. My wife, who has had Autumnal Catarrh for sixteen years in succession, was in Montana in 1868, at an altitude of 5,000 feet above tide, and escaped it entirely."

J. A., of Laconia, N. H., escaped "Hay Fever" in Denver, Colorado, with the exception of one day at Dr. King's *ranche*, about seven miles from Denver. He heard of no cases there, nor did he find "Roman worm-wood," with the exception of a small patch at the *ranche*, although he searched for it in half the counties of the State.

W. B. Laurie, Esq., of Saline County, Mo., having suffered there for seven years, — "I left my home about June 14th for Colorado Springs, in Colorado, verily believing that my enemy could not exist in this climate. But in this I was sadly mistaken. I was attacked on the 6th of August, and am just entering [August 22, 1874] upon the third and worst week of suffering. In Missouri my period began between the 10th and 15th of August, and continued till the latter part of September." He suffered at Colorado Springs, 6,000 feet above the sea, six days earlier than at Marshall, Mo., in 1873.

"I do not have asthma; my eyes give me more trouble than anything else. Sometimes, when the cough comes on, my breathing is a little rough, but not difficult."

"The altitude of Colorado Springs is 6,000 feet. Climate, soil, vegetation, everything, is altogether different from Missouri. It may be that I would have escaped, if I had not taken a violent cold while up in the mountains, sleeping on the ground without a tent. I was then over 10,000 feet in the air. The weather at night was very cold, almost at the freezing point. The summit of Pike's Peak is only seventeen miles distant. Sometimes I am almost tempted to make the ascent by way of experiment."

"So far, I am not suffering so much as I usually do. I have never met a fellow sufferer. I have heard of one, however, who lives in Pettis County, south of Saline County."

Case 11. Mr. E. F. Atkins. — August 13, 1869, he left Boston on a journey to Sacramento, intending to be absent from his home in Belmont,

suffer on the Pacific coast, and that others have been free in San Francisco.¹

The western line can be traced southward as far as St.

Mass., during the usual continuance of his catarrh. He went to New York well, riding in a railway "sleeping car;" on awaking the following morning, perceived that he had a little cold in the head and throat, which ceased on reaching Pittsburg. The following morning, on awaking in the western part of Indiana, felt a slight catarrhal affection, which continued during his passage through Iowa, but on his arrival at Omaha (960 feet) on the 17th, he was quite well. He then passed over the uncultivated prairies of Nebraska to Cheyenne, in Wyoming Territory, on the railway, traveling night and day. On the 20th he took the coach from Cheyenne (5,800 feet) to Denver (5,200 feet), passing through Georgetown on the 21st. Ascended Grey's Peak (15,000 feet high) on the 23d, returned again to Idaho, which is about 8,000 feet, and on the 24th, by stage-coach, to Denver; on the following day returned to Cheyenne by a hot and dusty road, by which his eyes were irritated. On the 26th he again took the railway, and passed over the alkali plain, noted for its dust, with little annoyance. The next day he was on the stage-coach, on his way to Salt Lake City, which is 4,200 feet above the sea; here he stayed two days. On the 30th left Salt Lake City in a stage-coach for Unita, on the Pacific Railroad, and reached Sacramento on the 1st of September. After visiting Stockton, the Yosemite Valley, and Nevada Falls, he returned to Sacramento, and set out for his return on the 16th of September, by the Pacific road. He was well till he reached the Mississippi River on the 22d, then unmistakable symptoms of Autumnal Catarrh appeared; instead of pursuing his journey directly east, he turned to the north, and reached Canada by the way of Chicago. On reaching Canada, and during his transit by railway through Canada, he was well. He arrived at Springfield, Mass., September 24th, and had a sharp attack of catarrh, which ceased soon after reaching home on the following day.

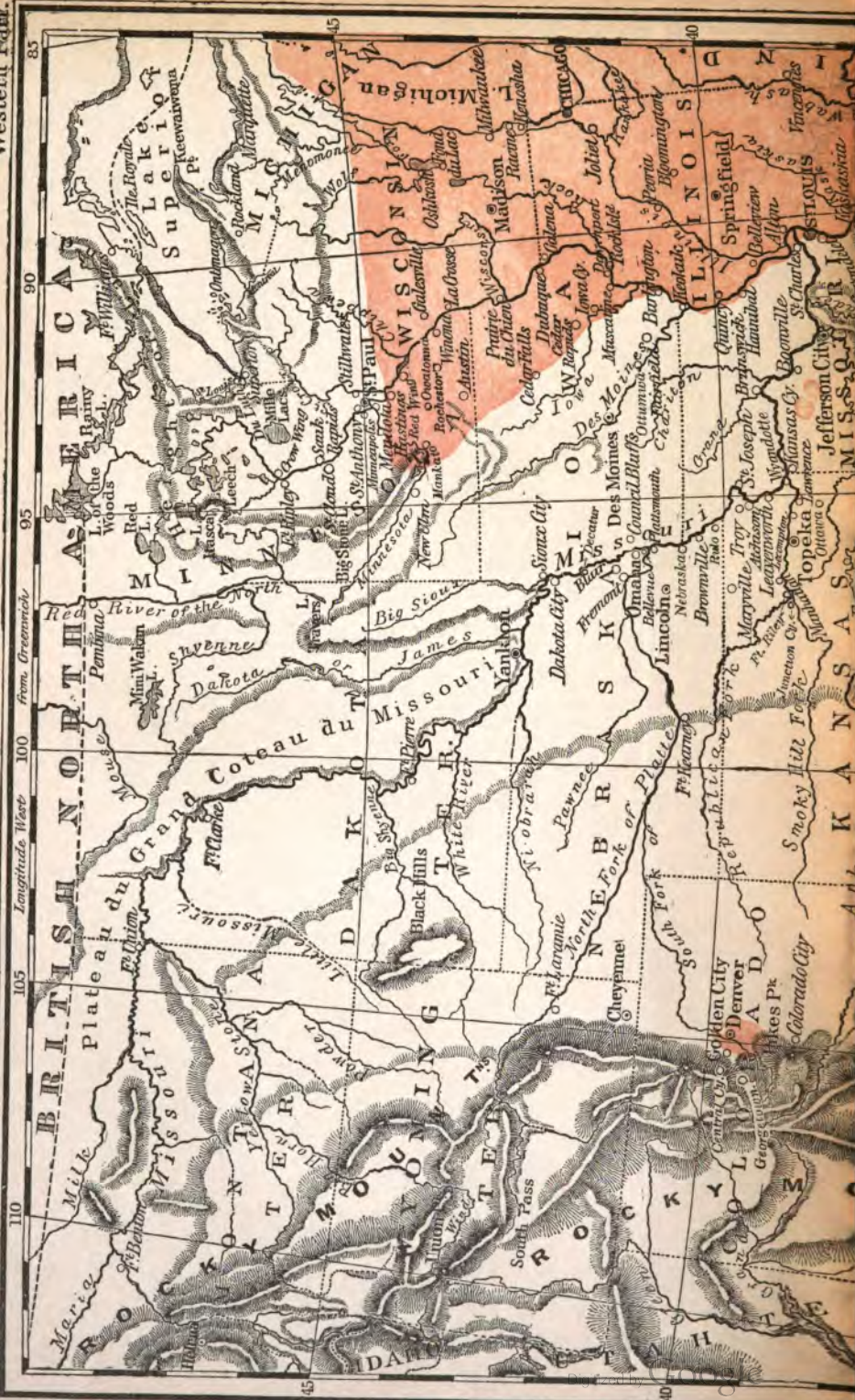
This case is exceedingly interesting. We have here a line of observation extending across the continent from east to west, by a very sensitive *catarrhoscope*, making a complete section. We perceive that he was not affected after passing the Mississippi onward across the mountains to Sacramento, nor on his return until he again reached the Mississippi; then turning north, he passed through a catarrhal region to Canada, and traveling through that safe region, was not again exposed until he crossed the great lakes.

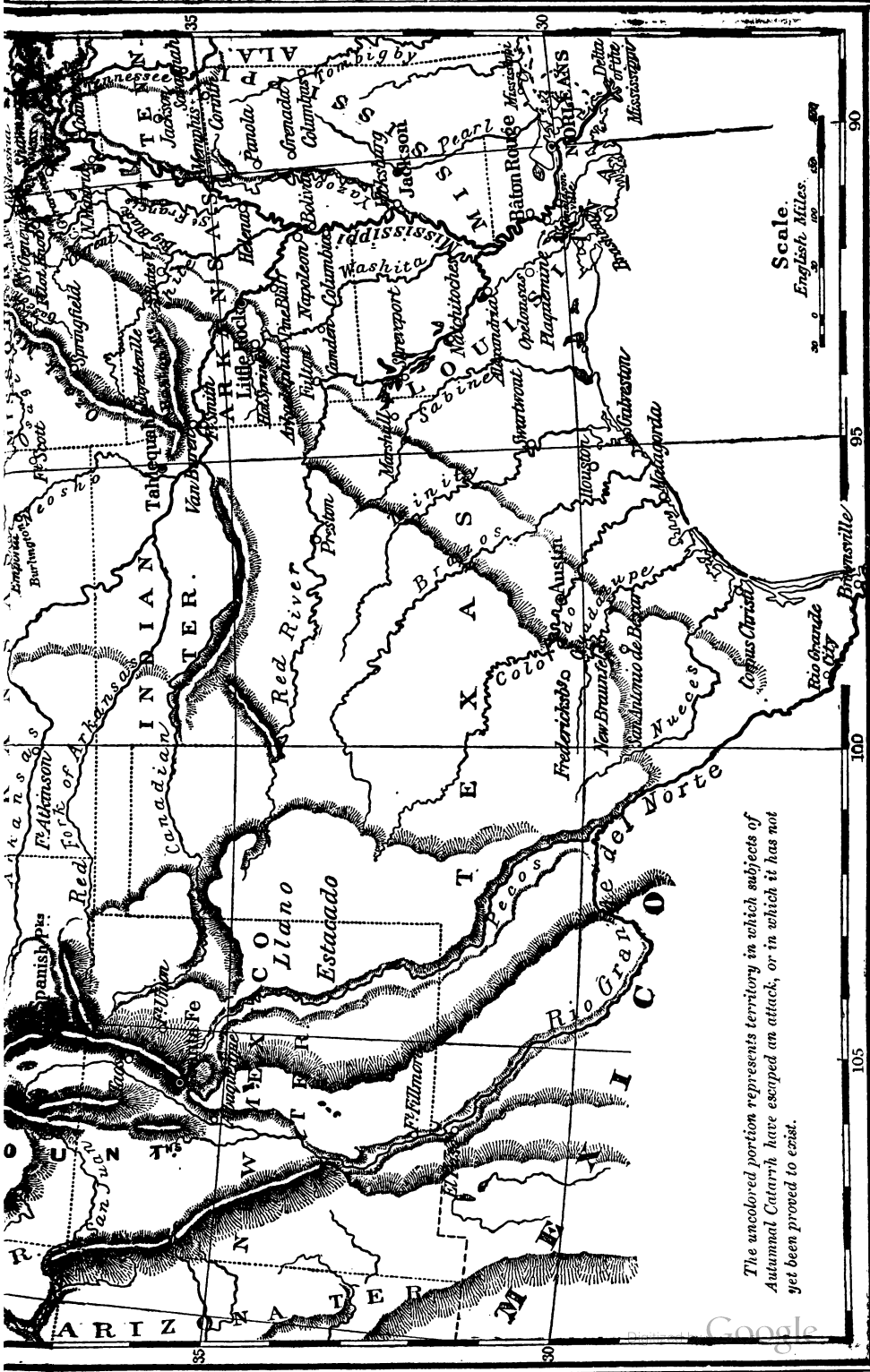
The following table gives the distances and elevations above the level of

¹ See p. 71.

By A. Guyot.

Western Paaf.





The uncolored portion represents territory in which subjects of Autumal Catarh have escaped an attack, or in which it has not yet been proved to exist.

Louis,¹ and Memphis, Tennessee, on the Mississippi, 260 feet above the sea, to Nashville and Knoxville, giving a line of over four hundred miles from the Mississippi directly east.² We then come to the Appalachian chain of

the sea, of some of the principal stations on the Union and Central Pacific Railroads, going east from San Francisco :—

Station.	Distance. Miles.	Elevation. Feet.
Sacramento	138	56
Colfax	192	3,448
Blue Cañon	216	4,700
Cisco	230	5,911
Summit (Sierra Nevada)	243	7,042
Truckee	258	5,866
Reno	292	4,525
Wadsworth	327	4,104
White Plains	361	3,921
Winnemucca	462	4,355
Argenta	534	4,575
Carlin	583	4,930
Elko (Utah)	606	5,030
Pequod	689	6,180
Kelton	790	4,500
Promontory	828	4,943
Ogden	880	4,320
Units	888	4,560
Rawlins	1,201	6,782
Sherman (highest point), Wyoming	—	8,100
Laramie	1,339	7,175
Cheyenne	1,396	7,040
North Platte	1,621	2,790
Omaha	1,912	965
Salt Lake City	—	4,200
Denver, Col.	—	5,200
Chicago, Ill.	—	600

¹ Case 74. Miss A. C. B. — Has been in St. Louis five years after suffering from Autumnal Catarrh in Massachusetts since infancy. She reached St. Louis about the last of August, and the disease continued till about the first of October, being severe only the first week.

² Mr. F. D. A. of Cincinnati, Ohio, writes: "The catarrhal district seems to extend as far south as Knoxville, Tennessee, for I have had the regular attack there twice, and quite as severely as anywhere else. The elevation of Knoxville is, if I mistake not, not far from 1,000 feet above the sea."

In 1870, had Autumnal Catarrh in Virginia, and Knoxville, Tennessee.

mountains. Here we have no evidence, but judging from analogy this elevated region is free. To the eastward, we trace the line to the south of Richmond, Virginia, until it reaches the Atlantic at the capes of Virginia. Here again we have reason to believe we are near the border line, from the fact that the testimony is not uniform, some escaping and others suffering at the same points.¹

In the southeastern parts of the United States we have the same deficiency of observations. Several persons have suffered in Washington, Georgia, not far from Milledgeville, at Beaufort, South Carolina, and at St. Augustine, Florida. But of those susceptible to the disease, not all were affected,² and one person from Boston, Massachusetts, who took up his residence in St. Augustine, has found himself gradually getting rid of his enemy, and another altogether escaped at Port Royal.³ General Joseph Rob-

W. P. F. of Nashville, Tenn. — Suffered for the first time August 23, 1871. September 10th, arrived in New Orleans; was well on the following day. September 19th was at Corinth, Miss.; soon after leaving Corinth, on the same day, he was attacked in the train, and suffered nearly as badly as at Nashville. In 1872 was attacked at home, August 24th, and was ill six weeks. In 1875 was again attacked on the 24th of August; went to the Island of Mackinaw September 15th, with relief.

¹ Case 42. E. P. — Was well at City Point, Virginia, on James River.

Rev. Dr. H. A. Tappan, Baptist clergyman, Richmond, Va. — Was born in South Carolina. While living in Washington, Ga., had an attack of catarrh eight years in succession, beginning about the first of August. The eyes were so irritable that he was obliged to keep in a dark room. He is now in Richmond, Va., where the attack begins at the same time as when in Washington, Ga. Got no relief at Sullivan's Island, S. C.

Colonel George T. Towle, United States Army. — "In 1858, 1859, 1860, I was in western Texas, in San Antonio, and the country northwest, a high and dry region. Here I escaped without even a symptom. In 1853, 1854, 1855, I was in Tennessee during the critical period, and suffered, but not with such severity as in New Hampshire. In 1862 I was in St. Augustine, Fla.; in 1863, at Beaufort, S. C.; in 1864, in front of Richmond, Va.; in all these places I escaped the disease."

² Mr. Hackett informs me that Dr. B. Dearborn, of Portsmouth, N. H., was free from catarrh in Florida.

³ Case 45. C. F. W. — Was two years at Port Royal, at the mouth of

erts was affected in Texas, Kansas, and Nebraska, and also in Galveston, Texas, on the Gulf of Mexico.¹

When we consider the extremely narrow bounds within which the catarrh may be limited, especially in

the Savannah River, during the War of the Rebellion, and escaped entirely, although he again suffered after returning to Brookline, in the vicinity of Boston.

Mr. F. C. W., New York. — Was at Port Royal during September, 1862. In camp had no symptom of his disease. He was then suffering from chronic diarrhoea.

C. W. L. of Fernandina, Fla. — Was born in Boston, and lived there till twenty-four years of age. Suffering from Autumnal Catarrh in 1863, removed to Port Royal, S. C., and in 1867 to Fernandina. The disease has gradually diminished, and is now scarcely noticed.

¹ General Joseph Roberts, United States Army. — September 9, 1872. "I have been a sufferer from the 'Hay Fever' for twenty-five years. My attacks commence on the 19th or 20th of August, and continue until the 5th or 6th of October. I do not recollect having escaped a single season from it. During this period I have served as an officer of the United States Army in Florida, Texas, Kansas, Nebraska, New York Harbor, West Point, Fort Monroe, Va., Fort McHenry, Md., and Fort Mifflin, Penn. It is very probable that in the South I did not suffer as much as at northern stations, but I do not recollect any material difference. General Cullum, of the army, informed me that the late Major-general Halleck was a sufferer from 'Hay Fever,' and invariably experienced relief, or rather entirely escaped on the Pacific coast, but on the Atlantic coast had it.

"For four seasons past I have spent a few weeks in the White Mountains at Bethlehem and Lancaster, when I have been entirely relieved; but as I have been unable to remain in the mountains during the entire period of the attack, I suffered greatly on leaving; and in September, 1871, had severe attacks of asthma in Philadelphia, where I stopped, *en route* for Fort Monroe, Va."

Dr. E. J. Marsh, Paterson, N. J. — "After catarrhal symptoms for seven years successively, I began to develop asthma. After five annual attacks of asthma, I passed three critical periods in St. Louis, Mo. The first season I had catarrh only, no asthma; the second I was at Fort Benton, and returned to St. Louis in the middle of August. Catarrh began a day or two before arriving at St. Louis; that year, also, but little asthma; the next year the asthma was worse. In 1861, 1862, 1863, 1864, I was in the army in Washington, on James River, at Yorktown, or Antietam, each year having catarrh. In 1865 I was at Petersburg, Va., and had asthma. In 1865 was ordered from New Jersey to Texas by sea; I had been ill four days before sailing; in twenty-four hours all symptoms ceased. In Galveston, Texas, I was well till the middle of September; then followed three weeks of catarrh."

mountainous regions, as we shall see farther on, it would be rash to infer from the condition of isolated cities or a small extent of territory, what may be the condition of the intervening country. We give the facts as they now stand leaving many points as to the geographical distribution of the disease to be still further investigated.

The accompanying map of the United States is colored to show the territory in which Autumnal Catarrh is found. The uncolored portions are believed to be exempt.

Of these boundaries, the southern and western are the least distinctly defined; they must be left as undetermined until further evidence is obtained.

§ 25. As at present informed, we may assume that it is a disease of temperate climates. It does not extend much beyond the shores of the great lakes, certainly not into the colder regions of Canada. Neither has it been proved to exist to any great extent south of latitude 35° ; that is, it is confined between the parallels of 35° and 47° north latitude. But it does not occupy the whole of this region; it is not found in the extreme east of the continent, nor on the Pacific coast.

§ 26. Its relation to the line of the southern limit of early frost is interesting. According to Lorin Blodget,¹ the lines marking the limits of mean single occurrence of frosts during vegetation are most difficult to place. A temperature of 36° to 40° at sunrise is commonly attended with frost destructive of vegetation, the thermometer being usually so placed as to indicate less than the actual cooling at the open surface. There is great uniformity in the position of a line along which the thermometer falls to 36° – 40° in the month of September at least once in successive years. A line separating or detaching the coast of New England south of Boston, New

¹ *Climatology of the United States*, p. 288. See note, p. 54.

York below West Point, the southern part of Pennsylvania, and extending through southern Ohio to St. Louis and Fort Leavenworth, would divide the districts of the eastern United States in which frosts might be expected in September from those in which they would rarely or never occur in that month. The most southern points at which this measure of single extremes may occur, are at Baltimore, St. Louis, and Washington, and Forts Towson and Jessup, west of the Mississippi. In October, the extremes are such that in any considerable series of years no portion of the continent north of the latitude of New Orleans escapes severe frost.

We see that the isothermal line of 36° – 40° in September compares pretty well with that which divides the region in which the disease ceases in September, from that in which it ceases, so far as our observations extend, in the first half of October.

SEA VOYAGE.

§ 27. We have no evidence that any similar catarrhal affection, during the critical period, attacks those who are sailing upon the open sea. But we have several cases of persons suffering in the early stages, who have ceased to suffer within forty-eight hours after losing sight of land. We have also the cases of those who, having almost passed the critical period at sea, have suffered soon after landing — sometimes within twenty-four hours.¹

¹ *Case 62.* — One year sailed from Liverpool August 14th, the attack usually commencing the 15th; landed in New York in ten days perfectly well; within twenty-four hours the disease appeared and went on as usual.

A gentleman of Sing Sing, N. Y., who has suffered twenty-five years, is free from an attack on the ocean, but is immediately attacked if he returns to land during the critical period.

Mr. P. — In 1869 was attacked August 20th; four days after, he sailed from New York for Europe, suffering severely, the weather being very hot and the air filled with dust; all trouble ceased after passing Sandy Hook. In 1871 sailed from Europe September 2d; he was well until he reached quarantine, in New York, when he was seized with sneezing while on deck.

The severity of the disease in most of these last cases has been thought to have been materially diminished, but it has not ceased earlier in the season than has been its wont. In other instances it has attacked in full force and so continued. In a few instances it has been asserted that the attack corresponded with the stage at which the disease would have arrived had the sufferer remained at home; presenting, therefore, the spasmodic cough or asthma, with the nasal symptoms combined or not, as was the habit of the disease at other times.¹

We have then reason to believe that a voyage in the open sea during the critical period will prevent an outbreak of the disease, or arrest it if it has already appeared.

SEA-SIDE.

§ 28. Sea-side residence seems to have some influence upon the disease, but very much less than a voyage across the Atlantic or a cruise many miles from land. Many have made the experiment of living directly upon the sea-

¹ *Case 1.* — "In 1864 I was in London during the period of the attack, and entirely escaped, not perceiving the slightest symptom; but having returned home to Boston on October 1st, I was slightly affected after that time, but only in the nose."

Case 75. — Was at sea on the way to India in August and September, without symptoms of catarrh.

Case 62. — "Was on a voyage from Liverpool to New York during usual time of attack, but had no evidence of disease until after landing."

Case 74. — "Left Liverpool September 6, 1866, and landed at New York about September 16th. She had no indication of catarrh till the day of landing. The attack usually commenced between 23d and 30th of August."

Case 28. — Hon. Lemuel Shaw. — Left Liverpool September 20th, and landed in Boston October 1st. The attack then commenced and continued till October 15th. The attacks usually began August 20th to 22d, and lasted about seven weeks.

Case 54. — "Was entirely relieved from Autumnal Catarrh during the three critical periods when she was at sea, in the months of August and September."

Case 4. — "I was in England in August, 1850; embarked late in that month for New York, where I arrived September 9th. I was entirely free until I landed, when the catarrh came on and lasted till late in the month."

shore during the critical period, where they can be sure of the sea air, and although in exceptional cases and in exceptional years considerable relief has been obtained, it has not been deemed sufficient to warrant a repetition of the experiment. Nor do those who reside permanently at the sea-coast escape.

Some, who admit that they have derived a certain amount of benefit from this position, declare that their enemy is still present, but the cool, bracing air gives them comfort and strength to resist it.¹ In some instances, where the residence has been far inland and a journey has been made to a city on the sea-coast, relief has been gained. Here, however, it is to be observed, that there is a double change, and it is difficult to assign to each its true influence. In one case a subsequent permanent removal to the sea-coast of Maine was followed by a diminution in severity.² Persons subject to a catarrhal affection throughout the year, but aggravated in September, are sometimes benefited at the sea-coast.³

¹ *Case 1.* — "The sea-side only benefits me by being cooler; the mountain air seems to afford me a remedy."

² *Case 22.* Samuel Batchelder, Esq. — "While in New Ipswich in the interior of New Hampshire, I went to Boston several times to consult physicians, but was so much relieved while there that I returned without consulting them. On going home the disease returned. When forty years of age, I went to Lowell, and resided there six years. The disease was more severe during the time. I attributed it to the greater amount of dust to which I was exposed while building mills. I was obliged to go frequently to the sea-coast which always gave more or less relief. Went to Saco (when forty-six years old) on the sea-coast, where I resided fifteen years; the disease, though quite as regular in its attacks, was much less severe there, and on the whole has pretty steadily diminished in severity to this time [1876]. Since then I have lived in Cambridge, and have had the disease annually. Riding in the railway train produces a decided aggravation of symptoms."

Mr. F. C. Withers, New York. — In 1866, while suffering from catarrh, went to Halifax, N. S., and was well in twenty-four hours. In 1871 he went to St. John, N. B., and although he was suffering severely from asthma, was quite well in less than a week. Was attacked at Newbury with catarrh, went to Elmira, N. Y.; was well the next day.

³ Mrs. H., of Cambridge, who has been for many years subject to

The extent of sea-coast under observation is very considerable; it extends from the capes of the Delaware in latitude $38^{\circ} 47'$ to Eastport, Maine, in latitude 45° . This last is near the eastern limit of the disease; and beyond this the coasts of Nova Scotia and New Brunswick, both those that border on the Atlantic Ocean and those on the Bay of Fundy, are believed to be free.¹

Some of the points along the coast, like Provincetown² on the extremity of Cape Cod, are insular in their relations to the sea; Cape May³ also projects far into the sea, and should have an insular climate. Others are actual islands, like Martha's Vineyard or Nantucket,⁴

a catarrh of more or less severity, but especially severe in September, is as much relieved at Oak Bluffs, Martha's Vineyard, as at the White Mountains.

¹ W. D. W., Philadelphia. — "I have passed the time of my affliction at the White Mountains, Maine lakes, and New Brunswick, and have found immediate and complete relief in all of these places."

Mr. E. M. Smith was well at St. John, N. B.

² Case 11. Mr. E. F. Atkins. — Attack of catarrh came on August 16, 1866, while he was at Cape Cod; by the 24th it had become severe; September 10th it was at its height, affecting his eyes severely. From that time his eyes improved, and the disease did not afterwards return in force, although the nasal catarrh did not entirely cease till late in October.

Case 8. Daniel Webster. — "Since August 17th" (at Marshfield on the sea-coast) "I have been more or less under the influence of my miserable catarrh; some days I have felt quite discouraged."

³ Case 4. — "I was at Cape May, mouth of Delaware Bay, one season, and found my catarrh aggravated."

⁴ Case 57. — "Has tried change of residence during the attacks. She tried first Nantucket (an island twenty-five miles from the main-land) and was more comfortable while in the town of Nantucket proper, but not very decidedly relieved. The air at Siasconset, the extreme point of the island, was too bracing or irritating to the mucous membrane of the throat and bronchi already inflamed. How it might have been if she had gone there before the attack came on, is a question. She has also tried the Isles of Shoals, where the attacks have been milder, but not enough so to counter-balance the discomforts of being from home."

Newport proved a relief to a lady in 1873.

In September, 1875, a gentleman of Plymouth, Mass., with his daughter, was at Nantucket without relief.

Case 74. — "I was at Nantucket one year with apparent delay of the attack, but next year a residence at the same island gave me no relief."

which lies twenty-five miles from the main-land. This island is about twelve miles long and four or five wide. The Isles of Shoals,¹ a group of islands six or eight miles from the main-land, has a climate that assimilates much with the open sea, so of Block Island, belonging to Rhode Island. Fire Island,² on the southern coast of Long Island and fully exposed to the Atlantic Ocean, has a similar climate. Mount Desert is also fully exposed to ocean air.³

Case 73. — "I left Fall River, Mass., for Edgartown on Martha's Vineyard (an island) by advice of my physician, who said it was 'Hay Asthma,' and caused by particles of vegetable matter, but I was worse than ever before. One year I spent the month of September in the city of New York, and had it very much lighter."

¹ Case 1. — "Two years ago I was troubled very much in Boston; I went to the Isles of Shoals [latitude 43°, opposite the New Hampshire coast, seven or eight miles from the main-land], where I arrived much worse from the journey. I do not think I derived any benefit from the air there; certainly I suffered more from the difficulty of breathing than ever before."

Case 41. — Got relief from asthma at Isles of Shoals one year, but the next year no relief. In 1868 was well at Dalton, N. H., near White Mountains.

Case 72. — In 1863 she was relieved at the Isles of Shoals; three years after she was again there, but the asthma was worse than usual.

E. S. Dixwell, Esq. — "1860, August 22d, I went by medical advice to the Isles of Shoals. August 26th and 27th, the 'Hay Cold' was very bad, and I returned on the 31st not improved. The malady continued until the middle of September."

² Case 33. — A clergyman has been at Fire Island, near New York, without relief, nor has he obtained relief at the Catskill Mountains. He arrived at Gorham, September 4, 1867, and for the first time for five years that he had suffered from the disease, was relieved in two or three days. The relief was complete.

The Fire Island Hotel is said to be a great resort of New Yorkers who are affected with *Ophthalmic Catarrh*. But whether this is the "June Cold," or some other disease, I have not been able to learn.

Case 35. — Relieved at Long Branch, on the coast, about thirty miles south of New York.

A gentleman from Killingly, Conn., found no relief at Block Island.

Case 18. — Is better in damp, cloudy weather. At the sea-side, with an easterly wind from the sea, is better; with a westerly or land wind, gets no relief.

³ Prof. Jeffries Wyman. — During four years suffered from Autumnal

In few of these places do we find instances of relief, and in none of them is the relief certain.¹

Even the agreeable and healthful pastime of boating, which gives to the mind pleasant occupation, to the body gentle exercise, and a free exposure to the invigorating influences of sea air, affords no protection.²

The experiment has been tried of leaving a place of safety during the catarrhal season, and going at once to the sea-coast, in the hope that, being already free from disease, the ocean air might be enjoyed without danger; but it did not prove successful.³

Catarrh. One year he was in camp in the Glen, and quite free until he reached Portland, September 24th, on his return to Cambridge. Another year, while at Mt. Desert, off the coast of Maine, he went, after the disease had appeared, to an island in the bay, and was two nights in tent; the weather was very damp and foggy, but the disease disappeared, and did not reappear until his return to Mt. Desert. The same happened after a visit to Otter Creek in the fog.

Mr. H., of Salem, Ohio, found relief at Newport, R. I., in 1871.

¹ *Case 1.* Henry Rice, Esq. — Resided in Roxbury, about four miles from Boston, where he went daily for the transaction of business as a merchant. At one time had a house at Swampscott, at the ocean side, but the suffering was so great while in the railway train between that place and Boston, that he was obliged to abandon the ocean side, and return to the city for relief.

Case 60. — "During several seasons I was at Nahant, Swampscott, or Newport, all of them on the sea, without relief."

Case 15. Edward Wyman, Esq. — Has lived in Roxbury and at the sea-side, at Nantasket, during several summers, but never perceived any material difference in the severity of the symptoms in the two places.

Case 77. — She has tried going into the country and to the sea-side, but has noticed no difference in the severity of the disease. This year, 1868, visited Gorham, where the relief has been decided.

Case 19. — "I get no relief at the sea-shore during the attack."

² *Case 44.* James T. Hodge, Esq. — "The symptoms at Frostburg, Md., were just like those at Plymouth, where in 1868 I resorted to my sail-boat, in the hopes of alleviating them by constant exposure to the salt water. But the weakness attendant on the disease soon made me disinclined to the effort. I found no benefit from salt water bathing."

³ *Case 75.* — "Was at the Glen House in 1864, with relief, after finding no relief at the Profile House and Crawford House. In 1866 was well at the Glen House. The first week in September she went to Saco, on the sea-coast of Maine; was attacked with catarrh, and obliged in two days to

We are, therefore, forced to the conclusion that the sea air has but little beneficial influence on this disease.

The influence of sea air upon the June Cold or "Hay Fever" of England is very different. Dr. Phoebus says: "Moist air brings to many, probably to most, great relief. Many praise the sea air. It brings a quick and lasting amelioration during the whole attack, even without sea bathing, which is also useful. Dr. Bostock proved this in his own case. Many reside at the sea-shore, or cruise about in yachts during the critical period. The asthma is immediately relieved at the sea-coast; but if the wind blows from the land, even for a single hour, the disease immediately returns." ¹

The same is true of the early summer catarrh, or Rose Cold of the United States, which seems much to resemble the "Hay Fever" of England, without, however, being identical with it. Many suffering from this disease here obtain relief at the sea-side so long as the wind is from the sea. The different effects of the sea air upon the Rose Cold and the Autumnal Catarrh, is an important point in the differential diagnosis between the two diseases, as will be shown presently.

return to the Glen House. The attack usually ceases in Philadelphia, her place of residence, about October 25th, the commencement of early frost. She obtained no relief at Crescent, in the Alleghany Mountains."

Case 71. — One year, September 7th, was obliged to leave the Glen House, and go home to Lynn, Mass., a watering place on the sea-coast, on account of domestic affairs; when within ten miles of the sea-coast, near Portland, was attacked with catarrhal sneezing and watering of the eyes. In two days she returned to the Glen House, was immediately relieved, and so continued.

Dr. E. J. Marsh, Paterson, N. J. — "I had return of asthma and catarrh in 1866, 1867, 1868, while stationed at West Point. The two years 1867 and 1868 I went to the Isles of Shoals, where I had no asthma, and very little catarrh. I left the Isles of Shoals September 17th, and on returning to New Jersey was attacked, and again found immediate relief at Fire Island. It was, however, near the usual time of disappearance. In 1870 I was again at Fire Island well."

¹ *Frühsummer-Katarrh*, p. 203.

CITY RESIDENCE.

§ 29. In some instances considerable relief has been obtained from a residence in a large city during the period of catarrh.¹ But it is seldom complete, even in as large a city as New York. We have instances of relief in Boston, but then it is incomplete, dependent upon the direction of the wind, either from the sea or easterly; and a ride into the country for an afternoon is sure to be followed by an attack.² Many have undoubtedly tried the experiment of a city residence, on the supposition that the cause of disease is to be found in vegetation, of which certainly there is much less in the city. If many of these cases have been successful, they have not come to my knowledge; I have known but one of complete relief.³ Of those who have tried it and failed, I have known many.⁴

¹ Case 1. — "I am much better in the city than in the country. I keep in the city as much as possible."

² I know a gentleman of the legal profession, who has been relieved of much of the severity of the disease by remaining in Boston during the critical period. Still the relief is not like that which he obtains at the White Mountains.

³ Case 56. Mrs. H. — In 1864 she went from the country to Boston, and lived in Beacon Street, near the water, from August 15th to October 1st, and escaped entirely, although she walked frequently in the Public Garden. She then returned to Waltham, in the country, and remained free from the catarrh. This was after twenty-five attacks of Autumnal Catarrh.

September 4, 1872. — J. N. Whiting, Esq., suffers from asthma during the later stages. His residence is in Orange, N. J. He gets complete relief during the night in the upper rooms of the Fifth Avenue Hotel.

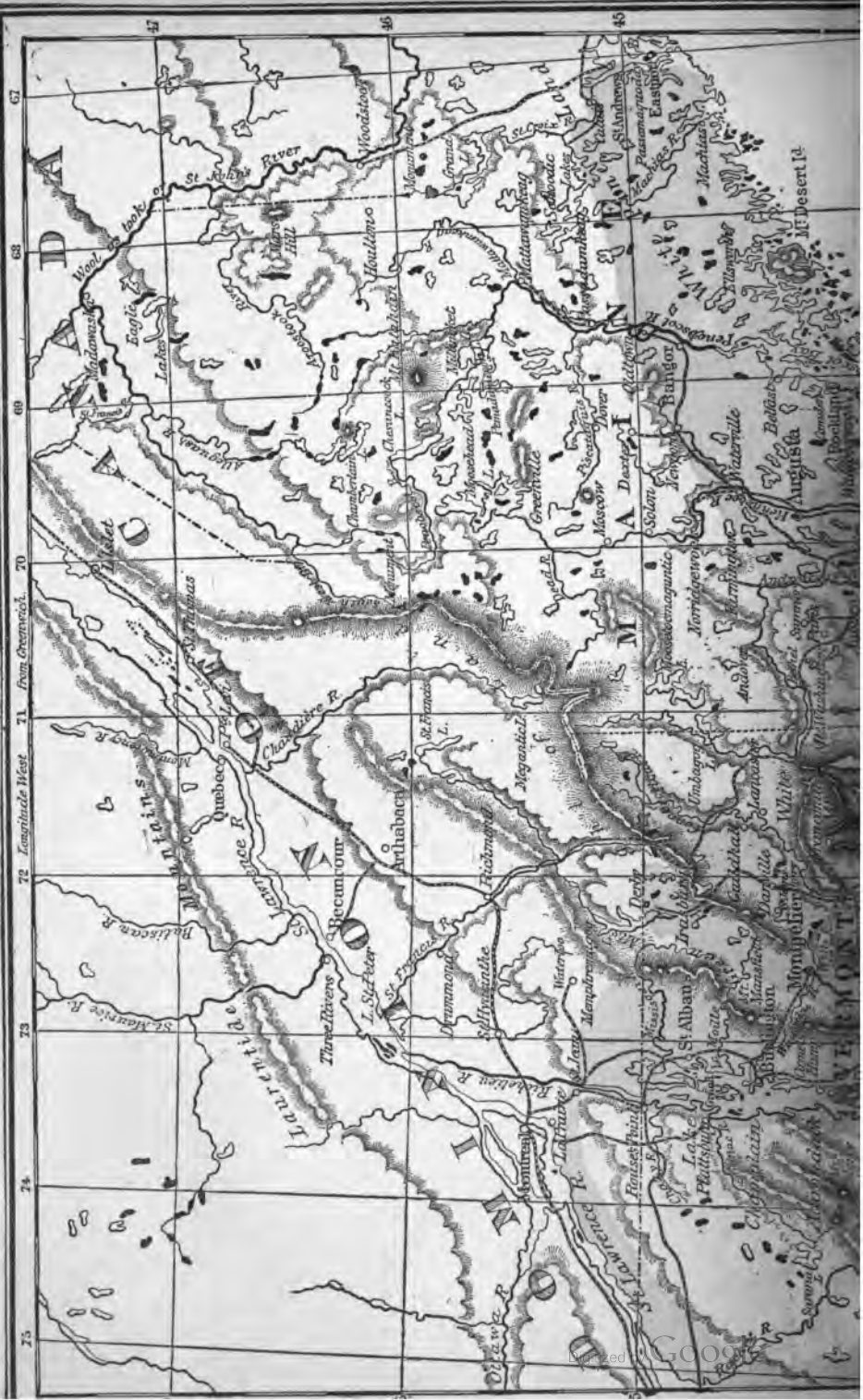
August 29, 1872. — Mrs. F. A. B. was relieved in severity, and the duration reduced from six weeks, the ordinary time, to three weeks, at the corner of Sixth Avenue and Eighth Streets, New York. Usually it lasts from August 15th to a killing frost.

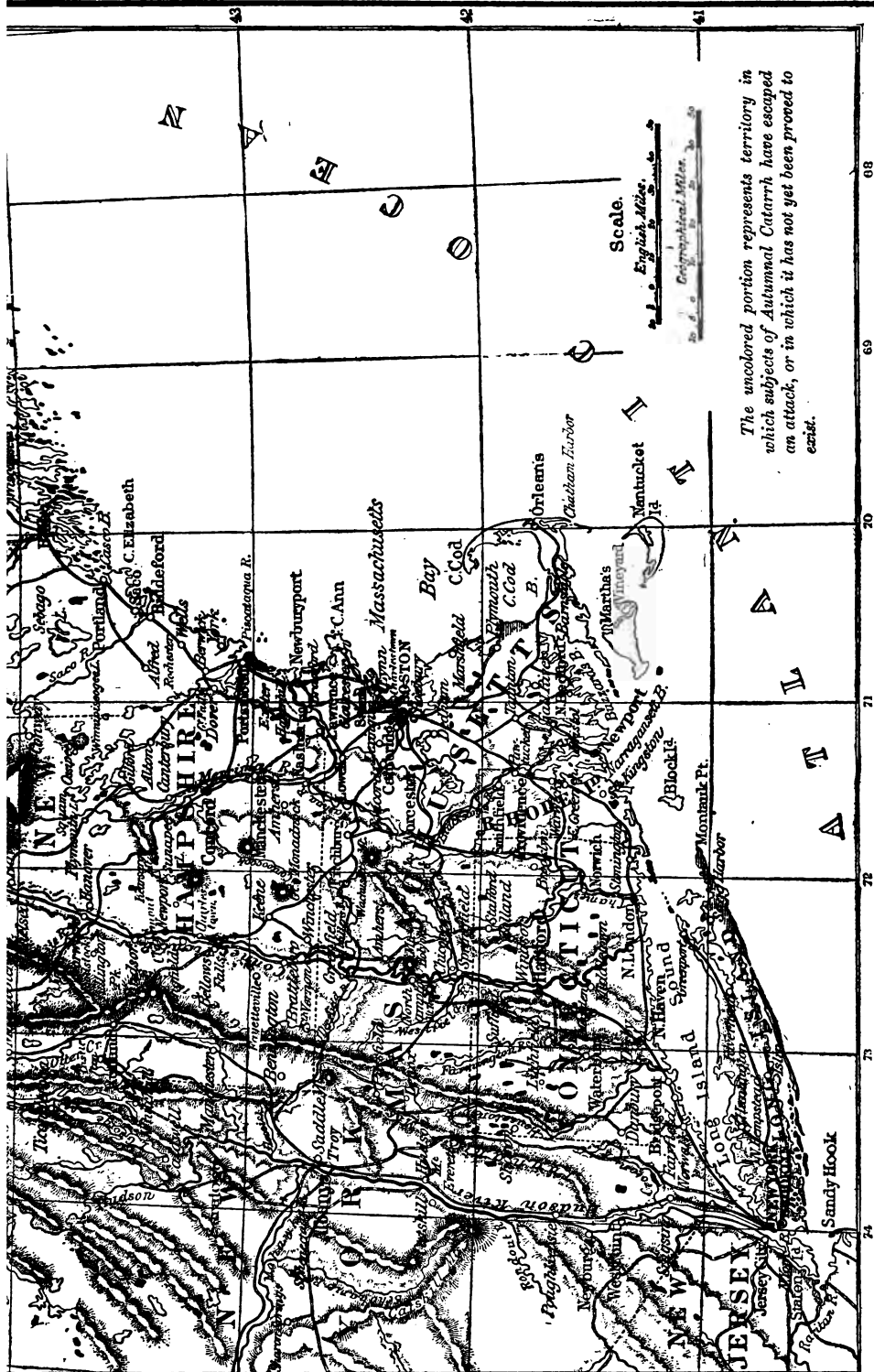
A lady of Northampton, Mass., who first suffered in Pittsfield, Mass., was free while in New York.

⁴ Case 3. John J. Dixwell, Esq. — "My first attack was while living in Boston, and I perceived no difference in severity whether I was in Boston or in the country in its immediate vicinity. It gradually increased in se-

NEW ENGLAND STATES.

By A. Guyot.





The uncolored portion represents territory in which subjects of Autumnal Catarrh have escaped an attack, or in which it has not yet been proved to exist.

Scale.

English Miles.

Geographical Miles.

MOUNTAINS.

§ 30. In a previous section (§ 24) large tracts of country were pointed out where the disease unmistakably exists. In these tracts there are certain places of greater or less extent, in which, so far as known, it does not originate; and a resort to which, at the proper season, prevents it in those who have previously suffered.

These places are, as a general rule, at a higher elevation than eight hundred feet above the sea level. But it should by no means be inferred that all places of this, or a greater elevation, are free from the complaint, or that places of less elevation are exposed to it. We have already shown that portions of country on the level of the sea are free from it. There are evidently other circumstances besides elevation which must be combined with it to give immunity.

The first person known by me who was relieved by a visit to the mountains, is a lady from Lynn, Mass. (Case 67 of the Table.) She had suffered severely, especially in the asthmatic stage. She accidentally noticed, in 1853, while traveling in the White Mountain region, that her catarrh, which for twelve years had commenced August 20th, had failed to make its appearance. The following year she visited the same region before the usual time of attack, with the hope of escaping it. She did escape it. During the remaining ten years of her life, until 1864, she was at the Franconia Notch, White Mountain Notch, or at the Glen House, — most of the time at the latter place. During this whole period she obtained complete relief. In 1860, Jacob Horton, Esq., of Newburyport, Mass., who had suffered so severely that he was

verity at each annual return, and I found myself more liable to catarrhal affections at other seasons of the year."

Case 40. — "I have been in the city of Philadelphia, sometimes during the whole season, and at various places in the country without relief."

6

Died Oct 30 1876 aged 79

obliged to keep his room during much of the attack, in answer to my inquiries, replied: "The only relief for me is at the White Mountains."

These facts drew my attention to the probable value of mountain residence. Other instances of relief soon became known to me, and persons suffering from this malady were advised to repeat the mountain experiment. They did so, and were successful.

It was afterwards ascertained that of those who sought the mountains, most were relieved, but not all. On investigating the matter, with a greater number of facts, it appears that all places in the White Mountain region are not equally safe.

According to the evidence we now have, the line of safety includes the Glen,¹ Gorham,² Randolph, Jefferson

¹ *Case 4.* — "In 1864, August 22d, I went to the Glen House with the cold and found entire relief; went up Mt. Washington and walked down to Crawford's on the 24th, got wet through, and while my luggage was coming round, was obliged to dry myself in the sunshine, but without any bad effect. I stayed at Crawford House and Profile House till September 1st, entirely well. I then went to Andover, Mass., *via* Littleton. The catarrh came on very badly in the railway train, and I suffered severely all through the month."

Case 40. — Has obtained no relief by visiting the sea-side; is relieved at the White Mountains speedily, especially at the Glen, and can then go to the Profile House with impunity. In 1868, having been at the Glen two days and three nights, quite well, went to Quebec, without any return of the disease.

Case 25. Henry Rice, Esq. — In 1862 first attempted change of residence. The first week in September asthmatic symptoms followed nasal catarrh and the affection of the eyes as usual, but more severe. He left Boston, September 7th, and spent the night at Portland, suffering severely; next day reached Gorham, N. H. Was much relieved, and remained at the Glen House, 1,632 feet above the sea, till September 24th, then went to Springfield by the way of the Profile House. On reaching Springfield in the Connecticut River Valley was again attacked with catarrhal symptoms and asthma. Then went to Lebanon Springs, and returned to Boston well. — 1863-64. Has been at the Glen House several successive years, making excursions up Mt. Washington and in the vicinity, and has had no trouble from catarrh on his return to Boston about September 27th.

² *Case 26.* Joseph Peabody, Esq. — In 1867 attack commenced August 23d and 24th. Suffered severely in railway train on the way to

Hill,¹ Whitefield, Bethlehem Village,² the Franconia

Gorham, where he had a severe night from obstructed nostrils and difficult breathing until 4 A. M., then much relieved. The ascent of Mt. Washington, August 30th, gave complete relief, which continued during the season.

Case 31. — A paper manufacturer has had Autumnal Catarrh for twenty-five years. A niece also suffers from the same. Both are relieved by a visit to Gorham, N. H., and the vicinity of the White Mountains.

Case 64. — After having the autumn catarrh with severe asthma for six successive years, arrived at Gorham, August 14th, and remained till October 1st, without any asthma, and hardly a trace of disease.

Case 65. Mrs. M. — Arrived in Gorham the morning of September 15th, after a week's suffering from cough, and with the eyes much irritated; the following night was much better, coughed less, and in the morning awoke with eyes also improved, but with some discharge from the nostrils. The thermometer stood at 32°, a black frost, and Jefferson and Adams white with snow. In a day or two she was quite well.

¹ *Case 3.* John J. Dixwell, Esq. — 1866. "Each year since 1863 I have visited one or more of the various places of summer resort in the White Mountains, Gorham, the Glen House at the foot of Mt. Washington, the Crawford House, and the Waumbec in Jefferson, and during these three years I have had no attack of catarrh. I have had some slight irritation, not enough to annoy me; no irritation of the eyes nor throat, no cough. I arrive at the mountains from August 22d to August 24th."

1869. After being at Mt. Mansfield a few days, "I then went on to Jefferson; suffered again in the railway train, and had another bad night at Littleton, though not so bad as before. I reached Jefferson on the 3d, and remained there till September 25th. For several days after my arrival had occasional attacks of catarrh, and my eyes were considerably inflamed, and through the whole month I had more of it than ever before at the mountains. Still my condition was vastly better than it had ever been in Boston during the same period, and, comparatively, I might call it relief."

A gentleman of Boston, with his wife, who had both suffered severely from annual catarrh, were at the Waumbec House in September, 1868. He was perfectly well for the first time in twelve years during the same period, and his wife (with the exception of a single day after unusual exposure), for the first time in twenty-four years.

Case 23. E. S. Dixwell, Esq. — "My attention being fully aroused, I

² A lady from Hartford, Conn., who suffers from "June Cold" got much relief by going to Bethlehem, May 27th and remaining seven weeks. On the 19th of July, on her way home in the railway train, she suffered severely. The curing of hay at Bethlehem and at home after her return gave her no trouble.

Notch,¹ the White Mountain Notch,² and the various mountains within this line. Some have been relieved at Shelburne, and also at Bethel,³ on the Androscoggin, but they must be considered as on the extreme border of the

find more minutes, especially as you had advised mountain air. August 14th. I feel the catarrh coming. 15th. Eyes and nose somewhat affected; dullness in the head. Off to Gorham, N. H. 16th. At Gorham, *no catarrh*. Continued quite well while at Gorham, except a slight rheumatism under scapula till September 1st. September 2d. Returned to Cambridge. September 4th. Have catarrh to-day; 5th, badly; and so it continued till the 20th or 25th. 1864. Went to Gorham, August 9th; some inconvenience felt in the cars from smoke and cinders. The woods had been on fire for weeks previous. After I was in Gorham I felt nothing of catarrh. On September 1st, I removed to Jefferson Hill, Waumbec House, and stayed there till the 10th of September, when I returned to Cambridge. I was perfectly well all that time. September 15th, I note that I have catarrh, and on the 21st, I have catarrh badly. I thus give you, Doctor, all the facts I have recorded about my case. They indicate very positively that my case is remedied by the air on that side of the White Hills lying to the north."

Dr. E. J. Marsh, Paterson, N. J. — "In 1872 I had been ill ten days when I arrived in Gorham, N. H., August, 1872. I was soon well and so continued till September 17th."

¹ Case 1. — "In 1859 I went to the White Mountains, intending to be there when the trouble began, and to remain there some time. I escaped with merely the slightest symptoms of cold in the head, and was perfectly well for several days after the ordinary period of attack. Business, however, compelled me to return to town earlier than I had anticipated. I left the Profile House early in the morning perfectly well, and was perfectly well when I entered the railway train at Plymouth, N. H. But after riding an hour, my trouble commenced, and it had its regular course that year, accompanied by difficult breathing."

² Case 3. — In 1863, after trying the air of Gorham, went to Conway, and was taken badly with the malady, and sent by his medical adviser off to the north again. Went to Crawford's, and was relieved again.

Case 4. — "In 1865 I arrived at Crawford House August 19th [he was then free from catarrh], and during my whole sojourn there till the 25th of September, I did not experience the first symptom of the approach of my annual cold."

³ Case 58. — Mrs. B., of Belmont, Mass., was a week or more at Bethel, quite well, though she had a touch of the catarrh before leaving Belmont.

Miss H. W. was well at Bethel, in 1871, but a visit of a day, six miles south of Bethel, brought on the catarrh; it was again relieved after her return to Bethel.

exempted region. Franconia Notch¹ is on the extreme southwestern border, and cannot therefore be relied upon in all cases. Neither can a sure immunity be claimed for Littleton, Dalton, and Lancaster,² certainly not for those portions lying on the Connecticut and Ammonoosuc rivers. To the north and east, among the lakes of Maine, we enter a country already described as free from the disease.

Besides the White Mountain region, our knowledge of which is more complete than of most other regions, there are other elevated tracts which are also safe. Among these are Mount Mansfield,³ in Vermont, one of the

¹ *Case 24.* — "Last year (1864) I concluded to try the mountain air again. The fever came on very suddenly and severely, and I started in the cars from Boston the last week in August, for Franconia; when I arrived at Franconia, I was completely used up. A hard cough came on, and for nearly three weeks, I could neither eat nor sleep. It was a mistake going there; it is too low and damp; there were but two or three pleasant days from September 1st to the middle of October. I found the air in Boston more favorable, and soon began to mend, although I think there had been no hard frost. In 1854 I visited the Franconia Notch, and found it very unfavorable. I had a very hard cough for two weeks, and did not sleep more than two hours in the twenty-four; and with loss of appetite, of course very weak. I remained in Franconia till frost came; then began to improve."

Henry Rice, Esq., gives me the case of a lady who in 1865 went to the Franconia Notch without relief from catarrhal symptoms from which she had suffered several years, and returned to Boston.

Case 75. — "In 1864 I was at the Glen; my catarrh and asthma ceased during the first week in September. I then went to Crawford's and the Profile House, staying three days at each, but found no relief."

Case 62. — After being at the Glen House, has been also relieved at the Profile House; another lady has also been relieved there. She got no relief at the Catskill Mountains.

² Littleton and Lancaster I have myself tried but found no relief. My stay, however, in the first named town, was short. See note 1, case 47, p. 63.

General Joseph Roberts. — 1872. "For four seasons past I have spent a few weeks in the White Mountains at Bethlehem and Lancaster, where I have been entirely relieved, but as I have been unable to remain in the mountains during the entire period of the attack, I suffered greatly on leaving, and last September had severe attacks of asthma in Philadelphia, where I stopped a few days *en route* for Fort Monroe."

³ *Case 3.* John J. Dixwell, Esq. — September 25, 1868. "Last year I left (Boston) on the 24th of August, for Burlington, Vt., going through

Green Mountains, and probably Stow Village, near its foot, although its elevation is said not to exceed seven hundred feet. So also the Adirondack Mountains,¹ in the northeastern part of the State of New York, including the St. Lawrence and Chateaugay ranges, and probably the great Pennsylvania and Ohio plateau,² which extends through the counties of Madison, Cortland, and Tompkins, and finds its greatest height in Chemung, Steuben, Alleghany, Cattaraugus, and Chautauqua counties, are probably free from the disease. In these last it has a

in a day and wearing a veil. It had rained the day before between Boston and Portland, but at Burlington they were parched up by a long drought. I got the "cold" about twenty miles from Boston, had it all day, and had a dreadful night at Burlington. It lingered about me there, and on the way to Stow, for two days. On the 27th I went to the top of Mount Mansfield, and found myself entirely relieved; came down to Stow the next day, and remained there well for two days. I found there a gentleman from Philadelphia, a naval officer, who had suffered from an annual cold for fifteen years; and was then nine days over his time without any cold."

¹ *Case 49.* — Has been at the Profile House without relief (1870). Entered the Adirondack Mountain region August 15th, by the way of the valley of Boreas River (about 1,700 feet above tide), twenty miles from any cultivated land. Was perfectly well when he left the valley, September 1st. At Bullard's he met the first cultivated ground where corn was growing, about twenty miles from Lake Champlain. In an hour he had the usual symptoms of catarrh. After his return home, had more cough than usual, and was sicker generally, but the disease ceased September 25th, which is earlier than usual.

W. H. Lowe, Esq., Providence, R. I. — Has obtained relief in the Adirondacks during four successive years.

E. M. Smith, Esq., Rochester, N. Y. — Has been in the Adirondacks with relief and also with relief at Fire Island and Watch Hill as long as the sea breeze lasted but no longer.

² E. S. Dixwell, Esq., during the four seasons he has been at Peterborough, Madison County, N. Y., on the great Pennsylvania and New York plateau, 1,200 feet above sea level, has been free from any decided symptoms of catarrh, and only occasionally slight intimations of it. Once when he drove down to Chittenango Falls, ten miles distant, and about 600 feet lower, he returned the following day with unmistakable signs of catarrh, inflamed eyes, nasal discharge, nose-blowing, and hot skin. These soon ceased after a walk on the hills.

Several persons have escaped at Chautauqua Lake.

mean elevation of about 2,000 feet above tide-water; its valleys are about 1,500 feet. The Catskill Mountain House,¹ 3,212 feet, affords relief to some. Still farther to the south, the Alleghany holds out places of refuge. Although Frostburg, Md., in the Alleghanies, 1,050 feet, was ineffectual, a farther elevation of 500 feet at Oakland, in the same mountains, answered the purpose,² in other instances it failed.

¹ Case 3. Rev. Henry Ward Beecher. — "I have abundant evidence that change, not of place, but of climate, will prevent it. The Catskill Mountain House is filled every season with fugitives from 'Hay Fever,' and they find immunity — some of my friends escape it — by going to the Adirondacks, and some by a tour through the Lake Superior region. Fire Island Hotel is a great resort for New Yorkers who are affected with ophthalmic catarrh. Fire Island is about fifty miles from New York, on the ocean coast of Long Island."

It may be a question whether a distinction is made here between the "June Cold" and the "Autumnal Catarrh."

Case 38. — No relief at the Catskill Mountains, near which he resides, nor at the sea-coast.

Case 48. — When residing in Brooklyn, N. Y., a visit to the Catskill Mountain House gave relief. After staying there three weeks, I returned to Brooklyn, and again found my malady. This occurred in two separate years.

A point four miles [1,000 feet] below the Catskill Mountain House gave no relief to a lady at Looney's, August 27, 1872, a resident of Brooklyn, N. Y.

Case 21. — "For about twenty years I was unable to find any relief except from change of climate, which was almost invariably obtained by a sojourn at the Catskill Mountains or in Western New York, during the period referred to."

The territory about the Catskill Mountains in which relief is found, is quite limited. A gentleman who was well on the mountain, was attacked immediately after a descent to Hudson River, about twelve miles distant.

² Case 44. James T. Hodge, Esq. — "Last summer (1870), I was at Frostburg, Md., 1,050 feet above the sea level. Suffered badly. A young man, native of the town, whom I employed as assistant surveyor, had it a second time there. He went to Oakland, on the Baltimore and Ohio Railroad, forty miles distant and 500 feet higher elevation (in a barren district), and found immediate relief. People from Cincinnati go there for the same trouble; one gentleman, an old sufferer, from Cumberland, which is 600 feet above the sea level.

Rev. J. B. Y., of Curwensville, Clearfield County, Penn., writes: "I am thirty-one, and have had the disease — asthmatic type — ever since I can remember. I am on the Alleghanies 1,200 feet above sea level, but have

Pottersville, Essex County, New York, on Schroom Lake, is said by Mr. Howison to be free from catarrh.

§ 31. Elevation is not the only element. The high counties of Massachusetts do not give the relief that is got at the White Mountains, and on the elevated plateau of New York. Stockbridge and Lenox, for instance, among the Berkshire Hills, at an elevation of about 1,400 feet, are not places of safety.¹ The same may be said of the vicinity of Grand Monadnock,² near Lake Winnepiseo-

no relief here except that which attends a frost earlier here than is usual in lower altitudes. I tried Ocean Grove, near Long Branch, in 1873, but found the disease troubled me there as usual, except when the breezes blew from the sea. I was at Oakland, on the Baltimore and Ohio Railroad in 1872. 'It was,' they said there, 'an exceptionally unfavorable year.' Of fifty or more patients there, only half a dozen escaped."

A lady of Dayton, who had suffered thirty years, was well at Oakland and Deer Park, on the Baltimore and Ohio Railroad, and at Cresson, but was ill at Altoona, twenty miles distant, and at a level 700 feet less.

Case 75. — "On my return to Philadelphia, I was again afflicted, and it continued through a part of October. We had no frost that year till November 12th. In 1867 I was at Cresson, Cambria County, Penn., among the Alleghany Mountains, one week in September. I had no relief; returned to Philadelphia, and was confined to my bed four weeks."

In 1875, a gentleman from Pittsburg, Penn., was completely relieved at Cresson Mountain House.

¹ Case 66. Miss C. C. — Had the disease with great severity in Stockbridge, Berkshire County, for eight years in succession. This town is about 1,400 feet above tide-water.

Case 23. E. S. Dixwell, Esq. — "In 1858 I had the disease at Lenox, Mass., August 20th; from that time till September 11th it was very bad. In 1859 I had the Hay Cold in the valley of Connecticut River."

"1861, was at Sharon Springs from July 18th to August 21st. On the 17th I felt the catarrh coming on, and was advised to try smoking a cigar; tried it, and thought it did some good. But I did not follow it up much. After my return to Cambridge, the malady continued very bad, and I became much exhausted and weakened by it till somewhere about the third week in September. 1862, August 21st, I felt wretchedly with catarrh; stayed in Cambridge."

² In September, 1866, I went with my son to Grand Monadnock, in New Hampshire; ascended to the summit, 3,718 feet, and spent the night at the Mountain House, 1,600 feet, without relief to either of us.

Case 70. Miss H. W. — Was one season at the foot of Kearsarge Mountain, near Lake Winnepiseogee, without relief.

gee, and the foot of Kearsarge Mountain, in New Hampshire. Mount Holyoke, 1,214 feet, on the Connecticut, in Massachusetts, has in one instance been beneficial.¹ Montreal has an elevation of fifty feet or less, which is about the elevation of the counties immediately around Quebec, although the city itself and Cape Diamond is about 350 feet higher. All this territory is safe. To those interested in this question, the Table of Elevations at the end of the volume, of the main points in these regions, may be found useful.

§ 32. The large number of persons, who have visited these regions successfully, demonstrates their safety. But we have other evidence: persons who have left them before the end of the critical period, have been at once attacked, and the attack has ceased immediately on their return.²

¹ Case 57. Dr. Anson Hooker's case. — "At Mount Holyoke she is pretty comfortable till the winds blow hard and the fogs come up on the mountain; then she starts for home." Mrs. H. has since found relief at Gorham, N. H., near the White Mountains, at an elevation of 800 feet above the level of the sea, and this for several successive years.

² Case 75. Mrs. S. B. — In 1866 was at the Glen with relief; during the first week in September she went to Saco, on the sea-coast, and was at once attacked, and in two days obliged to return. She was again relieved. On the 25th of September she again went to Saco, after a frost there, without a return of catarrh.

Case 12. — Mr. W. P. A., a German gentleman, has been at the White Mountains always with relief; but if during the period of usual sufferings he goes to New York, he suffers while there and on the way there.

Case 69. — "I left Cambridge September 2d, with unmistakable catarrh, and arrived at Dublin, N. H., at 4½ p. m., having suffered much in the train. 3d. Much relieved of the cold, but the irritation of the skin about the nose and mouth continued. 5th. Irritation much less, and at length entirely disappeared. 11th. I started for home perfectly free from any appearance of the catarrh, and continued so till I reached the outskirts of Fitchburg, when I began to sneeze, my eyes to smart, and the cold was again upon me in all its vigor."

I left the White Mountains with Professor Wyman; we were then both well, and were both attacked when near Portland.

Case 58. Mrs. J. B. — She suffers annually, commencing August 7th. In 1866 she was in Brunswick, Me.; well until August 16th. She then

The change in a sufferer fully under the influence of his malady, on arriving at the mountains is sudden and striking. His first night's sleep is refreshing, and in the morning his most annoying symptoms — the itching and watering of the eyes, the sneezing and nose-blowing, or the asthma — have much diminished. A second night gives still more relief and usually in the course of the following day most of the symptoms disappear. Besides this relief of the local symptoms, a still greater change takes place in the spirits. Activity of mind and body replaces discouragement and weakness, the usual flesh and strength are regained, and the sufferer feels assured that he has at last shaken off his enemy. If, however, the disease has continued until the mucous membrane of the nostrils and air tubes has become irritated and thick-

went to Bangor, Me., on the Penobscot, and remained well until September 5th, when she took the railway train for the White Mountains, suffering severely on the road, and reached the Waumbec at Jefferson Hill the same day. She was at once relieved, and remained at the Waumbec well until October 1st. Then returned to her residence at Belmont, in the vicinity of Boston, and was there a few days quite well. She then made a journey south, and on her arrival at Philadelphia was seized with the usual symptoms of catarrh. After remaining one week in Philadelphia and suffering severely, she went to New York, where she was again immediately well, and so remained. During her stay in Philadelphia, the flowers were in full bloom, and much like the middle of September near Boston.

It would seem, too, that there may be something real in the stages of the disease, depending, perhaps, upon a regular succession of annual influences acting at certain portions of the critical period, for some patients declare that if they leave the mountain previous to the usual termination of the disease they do not go through all the stages, but only those remaining incomplete at the time of return. How far this may be sustained by a considerable number of cases, I cannot say.

S. A. Wood, Boston, 1872, August 27th. Arrived at the Glen House, so feeble and suffering so severely from asthma, having previously had catarrhal symptoms, that he could not walk up-stairs. The next day he was somewhat better, and rode to Glen Ellis Falls. The third day he ascended Mount Washington, walking three quarters of a mile. He was well afterwards. September 7th, he went to the Twin Mountain House — was worse that night and has not been as well there as at the Glen.

ened, the disappearance of these changes and their effects is gradual.

The number of cases obtaining this relief in certain regions is too great to be explained by coincidence ; the repetition, year after year, of the same relief at the time of arrival in such regions, is conclusive that the relief is connected closely with the arrival ; that the causes of the disease, whatever they may be, have ceased to be efficient. We have no evidence that persons, residents of these regions, suffer.¹ We have also the still further evidence that it is not dependent upon simple change of residence, for very many of those who are relieved in these regions have tried various other places without success ; and yet these places, by their distance from their usual residence, and different physical conditions, should have afforded relief, provided ordinary changes alone were required. They have also tried various kinds of drugs, and different methods of medical treatment, with as little success. An examination of the Table at the end of the volume will show the influence of residence in a considerable number of places, whether beneficial or otherwise.

There is a remarkable similarity in the effect of certain localities. If one well marked case has obtained entire relief, it is rare to find a case which fails of some relief, no matter how great may be the difference in age, position, or residence. It must not be inferred, however, that all will obtain the same amount of relief at the same place ; some cases not relieved at an elevation of 1,400 feet at Bethlehem, were well at Gorham, 800 feet lower. The same is true of other places.

¹ Mr. F. C. Withers, New York. — 26th August, 1872, arrived at the Alpine House, Gorham, with severe cough, copious expectoration, and asthma ; could not walk without assistance, so much were the paroxysms increased by exertion. On the fifth day, the disease ceased — both the cough and asthma disappearing suddenly — in a few minutes ; from that time to this, September 17th, he has been quite well. He thinks his relief here more prompt and complete than in St. John.

We shall return to this subject in the section on treatment, where it more properly belongs.

There is another singular fact. Many of those who cannot eat fruit at home without a paroxysm, and those who cannot smell of certain flowers at home, can do both with impunity in non-catarrhal regions.¹

We are forced to the conclusion, then, that the causes of a paroxysm of disease which exist elsewhere, are less active, or entirely wanting in the places above mentioned; and that those who visit these places in due season, are for the much larger part greatly relieved, or entirely free.

The line between the catarrhal and non-catarrhal regions is often quite sharply defined. A ride of five or six miles from Bethel to Albany, in the White Mountain region, was followed by an attack in the case of a lady, a subject of the disease, who was quite well at the former place. So also a ride from Peterborough on the New York plateau to Chittenango Falls, ten miles distant, was followed by an attack.² The same is true of the Catskill Mountains.³

¹ *Case 78.* — "I cannot eat tomatoes nor peaches at home because of the soreness of the mouth and the swelling of the lips they produce; but at the White Mountains I can eat both tomatoes and peaches with impunity."

Mr. E. M. Smith, Rochester, New York. — Is affected by peaches in the Adirondacks and the White Mountains, although he escapes the other usual symptoms in both places.

Mr. B. W. A. — Fruit and vegetables, such as pears, apples, plums, and green corn, when eaten at home, produce excessive discharge from the nostrils. In a non-catarrhal region they can be eaten freely without any ill effect.

Case 63. — When at home in Lynn, Mass., the touching of a peach, pear, or melon, would bring on the head symptoms, sneezing, watering of the eyes, and irritation of the throat. During the last eleven years of her life the catarrh period was spent at the White Mountains, principally at the Glen House, where she was entirely relieved and could take fruit of all kinds freely.

² These two cases, so far as elevation is concerned, are quite different. In the first case, Bethel is 700 feet above the sea, and Albany but a few feet lower, while the elevation of Peterborough is 1,200, and Chittenango Falls but 600.

³ Note 1, p. 87.

It should not be concluded that the places named above are the only places where relief is to be obtained. It is highly probable that many others will be found equally valuable, and perhaps in some of those pointed out the cure may be less complete than is now supposed.

Nor is it to be inferred from what precedes that all cases of catarrh or asthma in autumn will be thus relieved. In the first place, asthma is a symptom which may occur at any season and may be caused by disease in the circulatory, the respiratory, or the nervous system, and there are other diseases which resemble that now in hand, which are not true Autumnal Catarrh, and are not cured by similar methods. And again, in the great variety of cases of this affection, both in severity and complications, we can hardly expect that some will not prove intractable. And lastly, the physical character of these places just named may be temporarily so changed in temperature, moisture, or other conditions of the atmosphere, or vegetation, as for a time not to prove beneficial. That such should be the case, is in analogy with what we know of many questions frequently arising in medicine and physiology, in which nothing is absolute and invariable.

The autumn of 1874 was peculiar. Several persons residing in Cambridge suffered very little although remaining at home, while others who were at the White Mountains suffered more than usual during their former visits at the same places. In 1875 many persons at the White Mountains generally were less relieved than usual. The most obvious difference was in the unusual high temperature and humidity; the same was true of many other places usually safe.¹

¹ W. M. Caldwell, Esq., of New York, who had for three years found complete relief, writes October 7, 1875, that he was aware of the disease in a very mitigated form. The conditions of the atmosphere were peculiar, different from the experience of the "oldest inhabitant." From 15th Sep-

The map of the White Mountain region opposite the title-page, illustrates the narrow limits within which safety may be found. The uncolored space represents those parts which, so far as we know, are exempt.

G. W. Howison, Esq., during the season of 1875 collected for the Hay Fever Association the statistics with regard to seventy-three persons, subjects of the disease, then at Bethlehem, New Hampshire. Of the seventy-three cases six only obtained *entire* relief; all except one obtained *material* relief; in nineteen there was "the complete suffocating stoppage of nostrils; the paroxysms of asthma; the sleep broken by continual threatened strangulation," which are the most distressing symptoms at home. Of fifty-six persons twenty-seven think they have found greater relief elsewhere, twenty-three that greater relief is found at Bethlehem than anywhere else in the United States, and six that the relief at Bethlehem is about the same as elsewhere. These statistics, as they appear in the Report, we should think, hardly present a fair statement of the relief usually obtained at regions considered non-catarrhal. Estimates of severity are apt to vary materially with different individuals. We have

tember, for three weeks, with the exception of a day perhaps, it was very hot, temperature of 80° to 85° at noon, of course cool at night as usual. It was so dusty we had to forbear our usual drives and walks. This was followed by heavy rain, and this condition by very cold weather and snow in the mountains.

Henry Ward Beecher writes August 26, 1872: "I fancy that several of us have low and feeble symptoms of catarrh from day to day, more than last year, though no one is really an apostate. The prevalence of extraordinary hot weather over the Continent makes itself felt here; not so much by great heat, as by the absence of that crisp, stimulating mountain air which we enjoyed so much last summer."

1872, September 7th, 8th, and 9th were warm days at the Glen House. The thermometer during the night of the 7th at 78°; on the 9th in New York it was at 97°; on the 8th the wind was from the south and accompanied by severe thunder showers. Most of the catarrhal subjects at the Glen during this heat were to a certain degree affected with sneezing and painful eyes.

several times expressed the opinion that the conditions upon which exemption from the disease depends would be very likely to vary not only in different places, but in the same place in different years. Indeed, all statistics, however valuable, must be used with caution if we would avoid drawing erroneous inferences.

CAUSES.

§ 33. It is difficult to say upon what this disease depends. Many causes are assigned by different individuals, and sometimes several by the same individual. That some of these supposed causes may have an influence is very probable, but they are so numerous and varied that it is at once obvious that they are not the primary causes; that there is something more general underlying these, upon which they act as secondary or exciting causes.

115 The more I have observed this disease the more I am astonished at the constancy of the causes which produce it, and the great similarity in ~~the~~ periods and ~~the~~ symptoms. Nationality, temperament, form, occupation, care or neglect, the advantages of fortune, all these seem nearly powerless in affecting a favorable result. 4

is prevented X Although we may not be able to arrive at definite conclusions upon this point, this should not prevent a careful investigation of the circumstances under which it appears, and so, perhaps, narrow the limits for a future and more careful study of a larger number of cases.

§ 34. *Sex.* Our table of cases shows us that the number of males greatly exceeds that of the females, seventy-two males to twenty-nine females, nearly three to one.¹ My inquiries have certainly had reference as much to the one sex as the other, and as they have been made in great measure at the mountains, to which freedom from the occupations of the other sex would allow females more

¹ A similar difference in the liability of the two sexes is noticed in the June Cold of England and the Continent: of the 154 cases collected by Dr. Phoebeus from various sources, 104 were males and 50 females. *Früh-sommer-Katarrh*, p. 8; *Die Krankheit ist häufiger bei Männern als bei Frauen*, p. 89.

preventing an attack at the appointed time

readily to resort, the probability is that the difference is greater than is here stated. Upon what this difference depends I am unable to say. If we suppose it due to the protection from atmospheric changes afforded by in-door occupations, we shall find farther on that so far as males are concerned such occupation appears to be adverse. The severity of the disease is quite as great in the one sex as the other; it is not probable, therefore, that a larger number of cases is overlooked in the one than in the other. Still further, it is not noticed that the peculiar functions of the sex have any influence in the time of attack, its course, or duration.

§ 35. *Age.* The following table exhibits the cases arranged with reference to age :—

Age when first attacked.	Males.	Females.	Total.
Under 10	11	—	11
10-20	11	4	15
20-30	12	13	25
30-40	4	4	8
40-50	8	3	11
Above 50	1	1	2

These numbers are too small to draw more than the single general inference, that the disease belongs rather to the early and middle periods of life; of seventy-one cases, fifty-nine commenced before forty; of the remainder, only two are known to have commenced after fifty. Females appear to be attacked later than males.

With some persons the disease has diminished in severity as age advanced; with others it has gradually increased.¹ I have never known any one who, having been once attacked, entirely escaped a tendency to it, and only

¹ The influence of age upon the severity of the disease, and also the relation of the disease to longevity, will be considered in the section on Prognosis.

one person who, having been free while living, even for several years in succession, in non-catarrrhal regions, failed of an attack on returning to a catarrhal region at the critical period.¹

§ 36. *Nationality.* Under this head we have but little information. All but three are American born; these are Germans; all were first attacked in this country; two escaped while on a visit to Europe during the critical period, and both after returning were again attacked at the usual period.

I have known but one colored person who is a subject of the disease.²

§ 37. *Profession or Occupation.* Here we have one of the many instances of the difficulty of arriving at accuracy in the matter of statistics, — an illustration of their fallacy, unless other circumstances than the mere figures, arranged under arbitrary heads, are borne in mind. It is not always easy to determine the profession or occupation, inasmuch as it has not always been one and the same through life. In the following table, that is adopted as the profession which was the employment shortly before and at the time of the outbreak of the disease. Several were occupied in the country, and out of doors, in early life, and sought the cities later, becoming merchants, or manufacturers, etc.; so, also, of those who have become members of the learned professions, some

¹ The June Cold, "Rose Cold" of England, is generally thought to diminish in severity with age. In advanced life some of the symptoms entirely disappear. This is most common with the throat symptoms; although instances occur in which the eyes are quite well. Gordon says, "Hay Asthma is never observed in the later periods of life." Bostock, on the other hand, says he never knew a person cured of it. Dr. Phoebus has no case which commenced after forty. *Typische Frühsommer-Katarrh*, pp. 74, 78.

² Mrs. B., herself a sufferer, and therefore well acquainted with the symptoms, reports to me the case of a colored child, the father an Indian, in Delaware County, Pennsylvania, who has Autumnal Catarrh with asthma.

were in youth pursuing the usual occupations of a country life. Both these classes would, under some views, and perhaps ordinarily at the time of attack, be classed as farmers; but as they had ceased to be farmers at the time of attack, the influence of that kind of life may also be supposed to have ceased, and they are classed according to the occupation then existing. It is true, we cannot say that change of occupation has no influence previous to an attack, but we do know that it has little influence after it, for of those who have once been subjects of the disease, I have known of none who escaped a predisposition to it by such change, or by any other change than removal from the catarrhal region.

TABLE OF PROFESSIONS OR OCCUPATIONS.

Statesman	1
Jurist	1
Lawyers	5
Clergymen	6
Physicians	7
Professor of Anatomy	1
Dentist	1
School-teachers	3
Students	6
Officers U. S. Army	3
Bankers	3
Bank Officers	2
Merchants	11
Manufacturers	12
Clerk	1
Gardener	1
Farmers	3
Carpenter	1
Butcher	1

It will at once be observed that by far the larger number above recorded have indoor occupations, requiring

but little manual labor. Of the six who use their muscles most, but three are farmers. It is not a little remarkable that of those who must make up the largest class in the community, so few should be reported as subjects. It may be that the disease with them is light, and therefore overlooked entirely, or not thought of sufficient importance to apply for medical aid. This, to a certain degree, is not improbable, for we find that physicians to whom application is made, do not all recognize it sufficiently to ask whether the disease has recurred annually, nor do the patients think it worth mentioning, even if it has been observed and remembered. It is by no means infrequent for a person to experience several pretty severe annual attacks before it occurs to him that probably these are returns of one and the same disease. Still, the mechanics and farmers of New England are too intelligent and too well educated to allow the disease to escape their observation entirely. If many applied for treatment at the *dispensaries* of the large cities, the fact would appear in their annual reports. No such disease is mentioned.¹

we I am inclined to think, therefore, that the disease is less severe or less frequent with those ~~that~~ labor, than with those whose employments are attended with less muscular exertion. The result, perhaps, of a life more in accordance with the rules of health, in this respect, for the mechanics and farmers of New England, as a general rule, are as well housed, clothed, and fed, so far as health

¹ Of those affected with June Catarrh, or "Hay Fever," Bostock says, "It is remarkable that all the cases are in the middle or upper classes of society; some, indeed, of high rank. I have made inquiry at the various dispensaries in London and elsewhere, and I have not heard of a single unequivocal case occurring among the poor." George IV. of England was a sufferer.

Of the cases collected by Dr. Phoebus, it appears that a much larger number, proportionally, of those who were noble born (*Geburts-Adel*) suffered than of the citizens, — 20 to 107. Of 154 cases, 146 were educated (*Gebildete*), and only eight uneducated.

is concerned, as those who are among the richer and in some respects more favored classes. This question, however, can only be satisfactorily settled when a knowledge of the disease becomes more general.

At the time of the publication of the first edition of this Essay, the "June" or "Rose Cold" was the only form of annual catarrh generally known. Since then, the number of sufferers from the autumnal disease has apparently greatly increased, until they seem greatly to outnumber the others. That this apparent increase is in no small degree due to the greater knowledge, may be admitted. Still, there is reason to think that the disease is on the increase, and it may be that the cause of this increase is to be found in the change of condition and habits of the people of the northern section of the United States, and more particularly of New England, which seems to be the home of the disease.

The first case known to me, that of C. B., Esq., of Chelmsford, Mass., dates back fifty years. The people of New England, descendants from a good stock, were then mostly employed in agricultural and maritime pursuits, or as small manufacturers. They were mostly in the open air, and their youth was spent in a way most likely to develop a robust frame and a good constitution. Their schooling was simple, practical, not too much of it, and got during the intervals of manual labor. Within the last fifty years, this condition of things has changed, certainly in Massachusetts. Cities have grown; crowding and indoor occupations have increased, and numbers have been withdrawn from the healthy occupations and life of the country. Children begin their book-learning earlier; it is more continuous, and through classification and competitive examinations, a forcing system is brought about. Crowded rooms and long sessions have taken the place of an outdoor life. Social customs have also changed; excitements of various kinds not before

known, are sought for and obtained. All this tends to an undue development of the nervous system. If to these considerations we add the increasing number of educated persons, who through life are devoted to intellectual pursuits we shall have reason to believe that the number susceptible to the disease has increased and will probably continue to increase.

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There is another view to be taken. The investigations of some of the ablest members of the medical profession, who are careful and conscientious in their declared opinions, have fully convinced ~~them~~ that there is a well marked decline in the fecundity, the health, and longevity of the American people. The facts have even led them to doubt seriously the permanency of the Anglo-Saxon race in this climate; whether the American will be a permanent nation, and whether it will not require a constant immigration to make up for the small number of children born to native parents, — a number which is constantly decreasing. It is a matter of common observation among physicians near the large cities, that foreign born parents are more fruitful than native born parents. Whether this be due to crowding in large cities, as some believe, or to other causes, has not been demonstrated. However this may be, it would seem not improbable that the same influence might increase the number of victims of the disease now under consideration.

§ 38. *Family Predisposition.* It can be shown that some families suffer more than others from Autumnal Catarrh. It has also been observed that not unfrequently, while some members of a family have this disease, others have June Cold, or are subjects of spasmodic asthma at the same season or at other seasons, or to sudden and unusually severe attacks of difficult breathing from exposure to the fumes of sulphur in burning matches, the gases of burning anthracite, or the smell of certain medicinal substances like ipecacuanha; in other

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words, have a peculiar sensitiveness of the respiratory nervous system, a sensitiveness which points to a condition similar to that in Autumnal Catarrh, even if it do not actually develop it.¹

In my own family, among the sufferers are my father, my two brothers, my sister, and myself; of three other children, only one arrived at maturity, a brother, who was exempt; my son is also a sufferer, and my daughter has June Cold, and her son developed Autumnal Catarrh at three years; her two daughters are free from both forms.

Chief Justice Shaw was the only ^{one} child of several ^{children} who arrived at maturity; his mother had Autumnal Catarrh; of his four children, one son is a sufferer; a son and a daughter have June or summer cold. The son who has Autumnal Catarrh, has a daughter who is now twenty-two, and has had Autumnal Catarrh six or eight years. Another son who has arrived at maturity has neither summer nor Autumnal Catarrh.

Rev. Henry Ward Beecher has a sister, and his brother a son, who are sufferers.

The following are the family relations of sufferers:—

In one case, a sufferer had a great-uncle who was affected.

In one case, a maternal aunt.

In one case, both parents were affected.

In four cases, the mother.

In one case, one parent being a sufferer, three sons and a daughter and a grandson; one granddaughter with June Cold.

In two cases, a daughter.

In one case two daughters.

¹ I am at all times sensitive to the fumes of burning sulphur and to the smoke of anthracite. Both produce immediate and violent constriction of the air tubes, with wheezing, asthma, and, not unfrequently, hiccupping, showing a decided affection of the nervous system.

In one case two sons.

In one case, one son and a granddaughter ; one son and one daughter with June Cold.

In two cases, each sufferer had a brother affected, the parents being free.

In one case, a sister and brother's son.

In one case, a brother's son.

In one case, a niece.

In a family in Plymouth, Massachusetts, three sisters, and in another, two sisters, and in a family in Ohio, two sisters are sufferers.

In one case a brother, an uncle, an aunt, and both grandfathers.

Of eighty cases recorded in our Table, in eighteen (one fifth) more than one member of the same family is also affected, — a much larger proportion than exists in the community generally.

My inquiries may not have been as distinct upon this point, or the answers as well considered as they might have been ; members of families who were young when reported may yet develop the disease. The probability, therefore, is that the family predisposition has been rather underrated than overrated. Here, also, further inquiries and larger numbers are needed.

As the facts now stand, it must be admitted that some families suffer more than others.

If this be so, it is not improbable that many of those who suffer are born with a predisposition ; and it may be also that many others are born with a slighter or with the same predisposition, which, for want of sufficient exciting causes, fails to be developed. It may be, too, that the tendency remains dormant in one generation, to reappear in the next, in analogy with what is sometimes seen in asthma and some other diseases.

The effect of inheritance must be the increase in the number of cases in the community, especially when joined

to an increase of those conditions which contribute to form more sensitive organizations — intellectual pursuits of all kinds and indoor employments.

§ 39. *Individual Predisposition.* Having stated the general condition of those who are attacked, we see nothing in these conditions, either separately or taken together, which would warrant us in assigning them as the cause.

So, again, if we examine the other general influences that usually produce catarrh in those disposed to it, we find them acting upon numberless individuals without producing such marked, annually returning, and long continued disturbance as we find in the comparatively small number of persons who suffer from Autumnal Catarrh. Nor do we know of any combination of these influences likely to produce such a train of symptoms at such a time. Neither do we find the individuals attacked particularly sensitive to the physical agents that produce ordinary catarrh. On the other hand, many of them declare themselves to be healthy, and (as they believe) less liable to colds at other seasons of the year than most persons.¹ They can expose themselves with impunity, even at the critical period, provided they are not in a catarrhal region, in a manner not common with others.²

¹ Case 44. James T. Hodge, Esq. — "As to freedom from colds, I think I have them much less frequently since these attacks. I very rarely have one."

Case 1. H. W. Haynes, Esq. — "I never suffer from colds, or very rarely, and enjoy good health, having never been sick before an attack of malarial fever caught this year on the bar of the Mississippi River."

Case 20. W. H. Y. Hackett, Esq. — "My general health is and always has been good."

² Case 4. T. H. T. — "In 1864 I went to the Glen House ill with the 'cold' (August 22d), and found entire relief; went up Mount Washington and walked down to Crawford's on the 24th, got wet through, and, while my luggage was coming round, was obliged to dry myself in the sunshine, but without any bad effect."

Case 10. Author. — My own general health I consider good, and think myself less liable to ordinary colds than most people. My profession has

The disease is not essentially local in its effects upon the system ; it cannot be controlled locally, and its very intractability under such medical treatment as that to which ordinary catarrh, in its first stages especially, not unfrequently yields, points to something deeper and more radical than can be supposed of a trouble merely local, — to another element in the individual himself, — to *individual predisposition*.

§ 40. Let us now inquire as to the system or systems in which this predisposition may lie.

The mucous membrane of the eyes, nose, and throat is apparently the seat of the first local outbreak, or it may be that the sub-mucous cellular tissue of some of these parts suffer quite as soon, if not sooner, than the mucous membrane covering it ; but it is by no means certain that it is here that the disease really commences. On the other hand, there are certain sensations of a more or less definite character : weakness, accompanied by a sense of sinking of the stomach, palpitation of the heart, experienced by some,¹ which either precedes or closely accompanies the affection of the mucous membrane, indicating that the nervous system has already begun to suffer.²

been a laborious one, and has called me to many exposures, both in summer and in winter, by night and by day, with very little illness that could be attributed to those exposures.

In 1868, 1870, and 1871, my brother, Prof. Wyman, myself, and my son, all of us subjects of this disease, spent the critical periods in tents in the White Mountain Glen, upon the banks of the Peabody. We were all not only without the Autumnal Catarrh, but without a cold of any kind, and returned with better health and strength.

¹ Case 41. J. W. D., Esq. — "The disease commences with a great sense of 'goneness at the stomach' and palpitation of the heart. To these succeed itching of the nose, eyes, and throat."

² Rev. Henry Ward Beecher writes : "As to the period of incubation, it is just now [July 30th] upon me, heat in palms, heaviness, with pains of joints, a sense of bones without positive aching, a slight flush of face, and disturbed sleep. It will pass in a day or two into an *unperceived* gestation, but it will be going on. I am strongly inclined to the theory of the nerve origin of this disease. Somewhere near the base of the brain among the springs of life, I think the toad will be found *squat*."

The suddenness with which the attack commences, the violence and rapidity with which it invades different parts, the redness of the conjunctiva, the injection of its vessels, the profuse lachrymation, the itching, the irritation of the nostrils, copious secretion and stuffing, the irritative spasmodic cough, more like whooping-cough than bronchitis; the sudden spasmodic asthma, the itching of the skin, and the speedy disappearance of all these symptoms, without the usual signs of inflammation, certainly correspond better with what we know of derangements of the nervous system than with those of the mucous membrane, or the organs by which it is invested.¹

Miss A. C. B. is quite sure that during the critical period an irritable state of the nervous system accompanies the catarrh. "Each particular nerve seems to be sensitive on its own responsibility." Even at the White Mountains, where there is no catarrh, this nervous sensitiveness is still felt. "I think the trouble must be in the *original protoplasm*. This may sound rather absurd; but at the mountains I have the nervousness just as much in another form — headache, etc., and when I get back to New York, am positively good for nothing for three or four weeks.

¹ Any one acquainted with the investigations of Claude Bernard upon the vaso-motor nerves, will readily admit that a parallel might be run between the symptoms of Autumnal Catarrh and the effects of the experiments of this eminent physiologist on the great sympathetic.

Cutting, tying, or arrest of action of the great sympathetic is followed in a healthy animal almost immediately by increase of heat on the side of the head operated upon; the vessels are enlarged, congested, and beat with greater force; the conjunctiva is red, the vessels injected, and the eyes tearful; the nasal mucous membrane is also reddened, and under some circumstances pours forth a copious secretion; the nostrils are obstructed, and there is a short cough. The glandular secretions, the local circulation, and the sense of taste are disturbed, but not tactile sensibility. The changes of heat are sudden, follow at once, and are greatest immediately upon the application of the exciting cause. The vitality of the parts is exalted, and the action becomes like that of an organ passing into activity from a state of repose. In other words, the abolition or diminution of the influence of the sympathetic, instead of paralyzing, increases the energy of these acts.

According to Dupuy, in addition to these, there is infiltration of the limbs, and an itch-like eruption upon the skin, which ends in affecting the whole surface.

Nerve filaments have been traced into the epidermal cells, and the whole cutaneous surface brought into as close relations with the nerve centres as other tissues; there is no doubt that a large proportion of skin diseases depend upon disorders of the vaso-motor nerves which cause certain derangements of the circulation in the arteries, veins, and cutaneous glands.¹ We shall not be surprised, therefore, that impressions made upon the skin should be transmitted elsewhere. We need not be surprised that, under a peculiar condition of the nervous system, a slight change of temperature in the skin, the passing from sunshine to shade, or the slight irritation of a hair upon the face should be followed by the train of symptoms witnessed in the subjects of catarrh; nor should we be surprised at the eruptions which break out upon the skin and the slowly-healing abrasions. It may also be remarked that injuries of the sympathetic are followed by a series of changes which includes many of those observed in this disease.

Neither the use of alcoholic stimulants nor abstinence

S. Weir Mitchell, in his admirable work on *Injuries of Nerves and their Consequences*, p. 153, describes the cutaneous eruptions consequent upon nerve injuries.

So, again, in experiments upon the fifth pair, the side of the face becomes red, the conjunctiva red and its vessels congested, although the temperature is lowered. Irritation of the superficial portion of the portio dura increases the secretion of the nasal mucous membrane and interferes with the movements of the soft palate. Claude Bernard, *Leçons sur la physiologie et la pathologie du système nerveux*, vol. ii. leçons xv.-xvi. 1858.

The integrity of the nervous system has long been held to modify growth and repair, and some dermatologists, availing themselves of the influence of the ganglionic system upon certain districts as regards nourishment and sensibility especially, consider the cause of herpes zoster (or shingles) an affection of this system, probably an irritation of the spinal ganglia or of the Gasserian ganglion. Isidor Neumann, *Lehrbuch der Hautkrankheiten*, Wien, 1871, p. 147.

The eruption of herpes zoster generally follows the course of the nerves. Trousseau, *Clinique Médicale*, vol. i. p. 207.

¹ Isidor Neumann's *Handbook of Skin Diseases*, Dr. Bulkley's edition, p. 392.

from them, seems to have influenced the predisposition, ~~and~~ it must be admitted that there is no peculiarity of constitution, form, or condition of body constantly observed in those predisposed. It attacks persons of all temperaments: those of light and those of dark complexion,¹ the light haired and the dark haired, those of large and those of small stature, the thin and the fleshy, the weak and the strong.² ~~Neither the use of alcoholic stimulants nor abstinence from them seems to have influenced the predisposition.~~ Nor is there any peculiar mental condition, unless it should be thought that the Table of Professions indicates a greater tendency to the disease in those of a higher degree of intellectual development. The most striking point is that it is more likely to attack those in good health than those who are ill.

and

omit

Some patients have been impressed with the belief that this and some other acute sicknesses are incompatible, and cite instances in which they were themselves ill of

¹ There are some remarkable peculiarities among animals in their relations to poisonous substances. Pigeons cannot be poisoned with opium, nor sheep with arsenic; the bears of the White Mountains are known to eat tobacco freely and with apparent relish; the same is true of some kinds of mice.

But one of the most singular facts in this relation is reported by Prof. J. Wyman. The white hogs of Florida have a disease of the hoof, caused by eating the paint root, *Lachnanthes*, which kills it and makes it drop off. The black hogs, of the same breed, are not subjects of this disease. This is so well known that in buying swine, contracts are made for black hogs only.

The white feet of horses are said to be weaker than those of a darker color. Virchow admits the peculiar morbid disposition [predisposition, vulnerability] of white animals [albinos]. *Pathologie des Tumeurs*, vol. i. p. 62.

² The same want of characteristic mental or physical conditions has also been observed in those who are subjects of the "Hay Fever" of England. Phœbus, *Typische Frühsommer-Katarrh*, p. 87.

Dr. Bostock says: "Those cases that have fallen under my own inspection have been generally of a spare habit and liable to stomach affections, but I have met with exceptions to this rule." "Hay Fever" — *Medico-Chirurgical Transactions*, vol. xiv.

other affections at the critical period, and the Autumnal Catarrh was arrested or delayed for the time. Among those mentioned are pneumonia, typhoid fever, intermittent fever, diarrhoea, dysentery.¹ In one instance, of a

¹ *Case 66.* Miss C. — "The third week in August I was attacked very severely with cholera morbus; for three days was severely ill; and did not entirely recover until the first of September, then the 'Hay Fever' came on; before the illness I had all the symptoms of the disease. I do believe 'Hay Fever' is a protection against other diseases. A person who had it a great many years, one year did not have it, and was very ill of typhoid fever and dysentery; the next year the 'Hay Fever' returned."

Case 45. C. F. W. — "One year had bowel complaint; the 'cold' did not appear until the bowels were well; it then came on as badly as ever." See, also, cases on p. 33.

S. B., in August, 1872, had gout, but Autumnal Catarrh made its appearance August 21st, before the gout had entirely ceased. See p. 33.

Case 55. — "One year, 1865, I was at Essex, on Lake Champlain, having a severe attack of Autumnal Catarrh; about 20th September I was seized with dysentery; the same day all catarrhal symptoms disappeared, and did not return that year."

C. W. B., now twenty-five years of age, has since five years old suffered severely every season except two, when he was in Illinois and Iowa, and each year during the critical period was suffering from "chills and fever."

W. H. Y. Hackett, Esq., writes, September 4, 1872: "While I was ill with a bilious attack, the 'Autumnal Catarrh' apparently abdicated, but the first symptoms of the yielding of the bilious attack was the return of the catarrh in full vigor; and it is now in undisputed command. But it is not as severe as it was during the second week."

Miss E. E. B. — I have sometimes had diarrhoea during the period, and this I have noticed relieves the catarrhal symptoms and the asthma.

W. M., New York. — In 1870, September 1st, while suffering from the asthmatic stage, was suddenly relieved of his difficult breathing simultaneously with an attack of pain in the right great toe and swelling, which extended nearly to the knee. The pain was severe for two weeks, when it ceased, but he had no return of the asthma, nor did he have the usually succeeding cough. September 1, 1871, he had a similar experience with the left great toe — and this again was followed by relief of the asthma. These were considered to be attacks of gout.

Mr. A. F. K. of Manchester, N. H., a subject of the disease for twenty years, had in August and September of 1835, an attack of dysentery, and passed the season without Autumnal Catarrh.

G. B. Ayres of Philadelphia, in 1863 had severe dysentery about the 5th of August, the date of usual attack; he did not get about again in

severe asthmatic form there was an interval of two years of exemption which was attributed to intense mental excitement caused by the incidents of the War of the Rebellion and the surroundings belonging to a regimental commander.¹ In one instance, an entire change from a literary life to that of a soldier and afterwards to manual labor, was accompanied by freedom from catarrh.² The causes here mentioned are various, and, so far as we can see, have only one element in common, and that is the decided impression they would be likely to make on the nervous system. The influence of an earlier form of catarrh in modifying this disease, we have already mentioned.³

In our search for a cause, we derive no assistance from condition of body or associated disease, and in this respect we are deprived of indications which are often valuable in the investigation of the causes of many other affections.

That the mucous membrane is implicated subsequently, is unquestionable. The great and rapid congestion of erectile tissue beneath the nasal mucous membrane, not only explains the sudden obstruction and equally sudden relief of the nostrils under the influence of the vasomotor nerves, but also shows how, under these repeated attacks, a congestive habit may be formed, and the tissue temporarily hypertrophied, or even permanently thickened.

less than two weeks, and then much reduced in strength; after recovering his strength, and supposing he had escaped the catarrh, he was attacked September 1st, and had the disease as usual.

¹ J. H. Ward, Esq., illustrative case at the end of the volume.

² Rev. J. D. of Washington, Ga., now living in Augusta, Ga., who had regularly returning catarrh in August, with headache, fever, itching of eyes, and sneezing. While in the Confederate army in tent, had none of these symptoms. On his return, so long as he was working as a brick-maker, his symptoms were very much mitigated, but were again upon him when he resumed his usual duties as a teacher and preacher.

³ See page 37, note, on my own case.

The eyelids also become puffy, the edges of the lids dry and irritated, and the lachrymal glands are in an excited or excitable condition; but these, like the mucous membrane, suffer later, and probably in consequence of the repeated attacks of congestion, as we have just stated with regard to that tissue, or it may be through some defect of nutrition.

We have already described the changes in the circulatory system, especially so far as the eyes are concerned. We have reason to believe these changes extend farther than is obvious to sight. The heart, certainly, is in some individuals more easily disturbed by slight exertion during the period of disease, even when there is no reason to believe it is caused by any general loss of strength. In some instances, also, there are intermissions or irregularity of the heart's action, and a nervous quickness of beat, especially toward the end of the complaint. That these are not dependent upon organic changes is demonstrated by their cessation when the disease is avoided by change of residence.¹

¹ I was myself much annoyed, for several seasons, during the catarrh, by these intermissions, and a feeling as though the heart turned over; I was also sensible of shortness of breath on ascending heights. These symptoms have disappeared since I have sought relief by change of residence.

The following case will illustrate the sudden onset and disappearance of symptoms during Autumnal Catarrh:—

September, 1872. A lady at the Twin Mountain House, a subject of Autumnal Catarrh, but then experiencing only very slight symptoms, one day immediately after dinner, had a sudden and severe pain in one eye as though it had been struck; at the same time the conjunctiva became very red. It was bathed freely with cold water for a few minutes, when both the pain and redness disappeared almost as rapidly as they came.

V. L. B.—“My last attack of ‘Hay Fever’ during September and October was marked with a peculiar aggravation, which I have had before. My asthmatic suffering seemed to proceed most of the time from an inability to raise and depress my chest in the process of respiration. The nerves and muscles engaged in respiration seemed partially to fail me. My asthma therefore seemed to proceed not so much from spasmodic constriction of the lungs as want of play of the chest. I suffered a thousand deaths from threatened strangulation.”

These expressions of disease, different from what we are accustomed to see in local affections, the absence of fever, the different degrees of severity in different individuals, and yet the conformity as to its time of commencement and duration, the little alleviation under any medical treatment, except that addressed to the nervous system, its sudden onset, its tumultuous course, and transitory character, lead us to suppose that the cause may act first upon the nervous system, and perhaps principally upon the great sympathetic.

As has already been stated, the influence of mental activity, or strong emotion is pretty decided. Whatever the tendency to sneezing, I never knew it to attack a clergyman or other public speaker when before an audience. A lady of great mental power, says: "It seems to me that if I am entirely awaked mentally in what I am doing—if I am writing an article for instance—I feel but little of the catarrh. I find a theatre a very good place to go to. The air there seems to be free from 'Hay Fever' poison, whatever other poison may be in it."

§ 41. But, admitting that there is an individual predisposition, and that we have correctly intimated the system first attacked, we have made no advance as to the cause of the outbreak at a certain season of the year and at no other. We may say that the exciting cause or causes do not exist. But here we are met with a difficulty. The causes which produce an access at the critical season, will not, as a general rule, even under favorable circumstances, produce a similar access at a non-critical season.¹ This we do not attempt to explain. We only

¹ Dust and railway smoke, which are so very annoying to all sufferers, never produce the peculiar symptoms at any other season of the year.

Roman wormwood (*Ambrosia artemisiæfolia*), one of the surest excitants, does not affect me at other seasons, either in its dried or flowering condition. During the critical period it is almost unailing. See note 2, p. 128.

know that it is in analogy with many other diseases. Affections of the bowels are especially rife in summer and early autumn, and accesses of disease are then produced by causes which at other seasons are harmless.

It has been thought that the cause of the return at a certain season is the summer heat. But the maximum of heat has already passed, and the nights have become cool, when the outbreak commences. The greatest heat, as a general rule, occurs in the last week of July, and, taken as a whole, that month is hotter than August. After the 15th, when by far the larger part begin to be ill, the heat has very materially declined, and continues to decline during the month of September, while the disease is worse, and so continues till frost appears.¹

If it shall be said that the disease is the result of the preceding summer heat, which has weakened the body, and so acted indirectly but efficiently, we can only answer, that we have no evidence either for or against this view. It must be admitted, however, that whatever weakens the body at this season may open the way for other influences to become active. Those holding this opinion think the mountain air brings relief through its bracing and strengthening qualities, but opposed to this is the fact that the relief is sudden and complete, and before any considerable change in strength.

It has also been supposed that the relief at the mountains is due to the lower temperature of these more elevated regions. So far as the White Mountains are concerned, this supposition is not borne out by facts. The temperature of the regions resorted to is generally almost

¹ By the tables of temperature at Cambridge, Mass., for the months of July, August, and September, for twenty years (1820-1839 inclusive), we have the following means: July, 71°.9. August, 68°.6. September, 60°.3.

In 1869 (see *United States Agricultural Report* for 1869), the average temperature in New England was for July, 69°.1; August, 65°.6; September, 62°.2. The maximum of heat was about July 15th.

identical with that of the homes of some who obtain relief there.¹

It cannot be denied, however, that great heat, even at the mountains, has been accompanied by catarrhal symptoms in subjects of the disease.

We can also show that if the disease were dependent upon the usual causes of catarrh, — changes of temperature, — the extremes of temperature at the mountains, so much greater than at the sea-shore during the same period, ought, one would think, to develop it.²

¹ J. J. Dixwell, Esq., of Boston, to whom I am indebted for many observations, has given me the following record of the thermometer from August 20th to September 20th, made at the White Mountains, principally at the Waumbec elevation, 1,248 feet, and at Jamaica Plain, near Boston, elevation about 100 feet.

Mean Temperature at Jamaica Plain from August 20th to September 20th.

YEAR.	6.30 A. M.	3 P. M.	10 P. M.
1856	57°.3	70°.6	60°.0
1857	57.7	70.7	60.3
1858	58.1	70.6	61.1
1859	53.3	68.0	56.3
1860	58.8	70.3	59.0
Mean . .	57.0	70.0	59.5

Mean Temperature at White Mountains from August 20th to September 20th, 1865.

YEAR.	6 A. M.	3 P. M.	10 P. M.
1865	54° 3	70° 8	59° 8

Mr. Dixwell remarks that the autumn of 1865 was considered uncommonly hot at the mountains.

² The temperature is generally assumed to change 3° for every 1,000

Besides, persons, subjects of catarrh, are not as a general rule any more, if as much, liable to ordinary catarrh as others.¹

So also of moisture. This is as great, probably, in many places which afford relief as in those which do not. Upon this point I have no observations, and can only ex-

fect of change of level, but this is so influenced by the particular local circumstances that this rule is of little practical value in this connection.

The following record was made in the White Mountain Glen, at about 1,200 feet elevation. The corresponding observations at the Observatory of Harvard College were kindly given me by my friend, Prof. Joseph Winlock, the late eminent director.

AT WHITE MOUNTAIN GLEN.			AT HARVARD COLLEGE OBSERVATORY.			
1870.			1870.	7 A. M.	2 P. M.	9 P. M.
September			September.			
4	8 A. M. . . .	68°	4	71°·3	84°·2	70.7
5	8 A. M. . . .	58	5		74.1	61.7
6	8 A. M. . . .	56	6	56.4	58.2	51.0
9	7 A. M. . . .	29	7	52.7	72.4	56.9
	Sunset	76	8	50.0	63.2	53.6
10	7 A. M. . . .	53	9	53.3	70.4	57.3
12		Water frozen.	10	58.6	65.8	
			11	48.7	64.0	50.0
13	Minimum . .	26	12	48.3	65.7	55.2
14	In sun . . .	112	13	45.2	73.6	59.7
15	Minimum . .	34	14	53.5	76.1	60.8
	At noon . . .	86	15	63.8	81.3	65.6
16	Minimum . .	56	16	63.0	76.7	58.9
19	Minimum . .	34	17	56.5	58.1	56.8
20	2 P. M. . . .	74	18	59.0	70.9	64.4
	4 P. M. . . .	71	19		64.4	51.1
	Sunset	60	20	45.7	74.7	56.9
21	Minimum . .	28	21	44.3	65.0	54.2
	Maximum, Sunset	77	22	52.3	76.0	59.5
22	Minimum . .	32½	23	53.7	81.0	70.1
	Maximum . . .	78				
23	Minimum . .	38				

¹ S. A. Wood, Esq., Boston, is generally in good health. Thinks he has had fewer colds and coughs than formerly.

Mrs. J. A. F. — "I am remarkably healthy. I have no cold at other seasons, even when I was in the hospitals two years during the War of the Rebellion." See also § 40.

press the opinion that those places where we have spent three seasons are no drier than our own residences.¹

The stronger sunlight of the long days has been accused of contributing to the production of the disease, even if not of itself sufficient to produce it; and support has been lent to both this supposition and that which attributes it to the heat, because of the greater annoyance from these causes during the critical period. But the days are as long, and the heat we have seen is no less, in regions which are exempt than in others.

It has been suggested that the disease may be caused by the relatively small amount of positive electricity in the atmosphere at certain seasons. During the months of August and September positive electricity is said to be low and a cause of catarrh. But if this condition be general, and if it be the cause of catarrh in these months, it is difficult to explain on this theory the immunity of certain regions in close proximity to others where it exists.

The fact that in some elevated regions there is more positive electricity than in others less elevated, will hardly account for the absence of the disease in the Bay of Fundy and on the coast quite round to Labrador. Nor again for its presence on the Berkshire Hills of Massachusetts at an elevation of 1,200 feet, and its absence in Gorham, N. H., at an elevation of 800 feet above sea.

It is said there is more positive electricity in moist air than in dry air; but the air of the islands off the New England coast, where Autumnal Catarrh exists, is no drier than that of those islands near the eastern extremity of the coast where it does not exist.

We are thus able to exclude certain influences from the list of causes, by the simple process of exposing the patient to these influences, in whole or in part, and finding that the disease does not follow.

¹ I here refer to the three seasons passed under canvas in the Glen on the banks of the Peabody River, with my son and Prof. J. Wyman.

§ 42. There is one assigned cause which a very slight consideration will show to be blameless, and yet it is from its supposed connection with the disease of which we now treat that it derives its popular name, — “Hay Fever.” Hay, in the temperate regions where the disease is most generally found, is made in June or early in July; it has therefore been carried a full month before the catarrh appears. Further, in some elevated regions it is not made until the arrival of those who seek relief, and yet no cases have come to my knowledge of an attack arising from this cause. It may therefore be safely assumed that there is no connection between it and the disease. The term *Hay Fever* is consequently inapplicable.

There are certain other supposed causes of which, on account of their almost universal influence, we cannot so easily dispose. Dust and smoke upon the railway, or the dust of cotton machinery or of the streets, some kinds of plants, will be quite sure to precipitate an attack if near the time of its usual appearance.¹ So promptly does the attack follow the exposure, that many persons assume

¹ Dr. W. C. Roberts of New York, a sufferer from Autumnal Catarrh, to whom I am indebted for several important facts, has described his own case in the *Medical Gazette*. “Hay never affects me, not even, so far as I know, when my cold was at its worst. Were I to inhale dust or fine particles it would no doubt irritate my nostrils. The worst attack I ever had was at West Point [Hudson River] in 1839, where there was neither hay nor peaches. Hay is always passing through the streets, and I often meet with it, and I lived several years on the directly opposite corner to one of the largest livery stables in the city where they were constantly taking it in, and it never affected me.”

Case 3. John J. Dixwell, Esq. — “The severity of the whole disease varies somewhat in different seasons; the time of the commencement of the attack depends somewhat upon accidental causes: a ride in the railway train with its smoke and dust, or a visit to a cotton mill, will hasten the period of annual attack materially.”

1872, August 22d to 29th. “Hay making is going on immediately around us on Randolph Hill near Gorham, 1,300 feet above sea, and yet those persons who are subjects of catarrh are there quite well.”

with great confidence one or several of these as the real cause of the whole disease. But here, it is likely the predisposition has already existed, and these substances, as likely, act only as excitants, even when the disease thus prematurely brought on goes steadily through all its stages; indeed, the fact that it will go thus steadily through all its stages by whatever means excited, renders it probable that the real cause is already present.

The experiment of residing in a large city has been made on the supposition, which I believe to be well founded, that catarrh is connected with vegetation, and it must be admitted that relief has, to a certain degree, been thus obtained, but it must not be overlooked that a large city differs from the country in many other respects besides vegetation, and these go to complicate the question. Still, it cannot be denied that there are probably those who, notwithstanding their predisposition, would have entirely escaped were it not for some additional influence like that just mentioned. For no one of the substances named above will initiate a similar train of symptoms at any other than the critical season.

No experiment, so far as we know, has yet been made in which the exclusion of a supposed cause has prevented the appearance of Autumnal Catarrh at the critical period. If this can be done, we can then easily obtain positive evidence as to its origin.

It is highly probable that many of the supposed causes which we have already discussed, and shown not to be separately sufficient to produce the disease, may be among the influences which when combined in certain ways may become efficient.

It appears, then, that we know little of the origin of this singular disease. This is to be regretted. But we are to remember that even if we did know its origin and nature, it would by no means follow that our success in its prevention or treatment would exceed that we now

have with our present knowledge of the character of its symptoms.

Nor should we be too strenuous in forming theories of the cause of disease, for we know but too well that erroneous theories in this regard have given rise to methods of treatment which have brought about fatal errors. It is much safer to study the tendencies of disease and its development, to note carefully the symptoms that can be relieved, and the methods of relief indicated. A sensible physician in the treatment of phthisis would not modify materially his course of action whether he believed in its inflammatory origin or not. Whatever theory may be adopted to explain the pathological changes, the disease remains the same. Physicians are still at variance with regard to the nature of lead colic, whether inflammatory or nervous, and if nervous whether convulsive or paralytic; but their treatment of the paroxysms of disease does not materially differ. Even when we know the origin of a disease completely, as the origin of itch in *Acarus scabiei*, the successful treatment is not materially changed by the discovery. Let me not be supposed to undervalue pathology, for it tends to prevent these very theories; it disabuses us of the hope of curing all diseases, and teaches us in the treatment of such as are organic and incurable, to limit our efforts to the relief of suffering, and abstain from these active measures which can but hasten its progress.¹

¹ For some excellent remarks on this subject, see Bayle, *Reflexions sur les indications curative et palliative, et sur l'art de traiter les maladies*, and Dr. P. M. Latham's *Lectures on Subjects connected with Clinical Medicine*, vol. ii. p. 360.

CAUSES OF PAROXYSMS.

§ 43. THE exciting causes of paroxysms are much more easily and satisfactorily investigated than the real cause of the whole affection. These causes can be put in action at will, and the effect follows so promptly that there is less room for doubt. The experiments have, many of them, been repeated so often, and under so great a variety of circumstances, that little question can remain as to their connection with the subsequent phenomena. Many of these causes have already been mentioned among those erroneously supposed to be primary causes.

Among the most prominent and general causes of a paroxysm is the dust and smoke of a railway train.¹ This

¹ *Case 21.* — "Attack aggravated by railroad traveling, also by exposure to cool air after exercise, and by exposure to night air; diminution of strength, accompanied by great lassitude so long as the affection continues. My lungs, ears, and throat are not affected. It commences with sneezing, itching within the nostrils, watering of the eyes, and free expectoration, most severe night and morning."

Case 4. — "Dust, railway traveling, heat, and sunshine increase the paroxysms in frequency and severity."

Case 22. — "Riding in the railway train produces a decided aggravation of symptoms. Much relieved by rainy or damp weather."

Case 63. — "Is annoyed by dust in sweeping a room, or the dust of the highway. New hay does not trouble her."

Case 72. — "I had dreaded to travel by rail fearing that the inevitable dust would bring on the trouble, though traveling by rail in Europe (at the same season) did not cause it at all. I was attacked on the boat."

"Was the disease in an incipient form in me, only waiting for an exciting cause which was found in the dust, or was it in the atmosphere between Green Bay and Chicago? I did not perceive any amount of dust."

Case 66. — "I am most comfortable when I have a piece of thick Swiss muslin, wet with water, tied over the nose and mouth. I most particularly avoid dust."

The fuel for locomotives on railways is wood or anthracite coal. The

trouble is so general that few fail to mention it as among the greatest of their annoyances. The dust of the highway on a windy day is another source of trouble, but less than that just mentioned. Whether it be that this last depends upon mechanical irritation alone, while the other, being a compound of chemical and mechanical irritants, acts in a double sense, we do not know, but with most sufferers it certainly takes precedence of all others. The dust from straw or hay is deleterious to some, and to others the dust from sweeping a room. I know of three subjects of the disease in whom the dust which collects upon books will provoke sneezing and a flow of water from the nostrils at any season. These sources of trouble are to some so great, that to avoid them the face must be covered with wetted muslin and the nostrils filled with pieces of wetted sponge. Some say that a slight draft of cooler air over the face, or the passing of a hair over it, will bring on an attack of as much severity as that from any other more general cause.

Strong light, sunshine, especially when it falls upon the face, will produce a violent paroxysm of sneezing, and the other symptoms then follow in quick succession. Moving from shade to sunshine, even when not otherwise annoying, will do the same. Opening the eyes in the morning, especially if accompanied with movement of the body, is equally provocative of an attack. The influence of strong light upon those sensitive to it is more sudden in its action than any other. Where it does not produce a paroxysm, in the weakened state of the eyes it is painful and is avoided. In some instances the nervous apparatus of the eye is sensitive, and the sufferer confines himself for days to a darkened room.¹

chemical constitution of the smoke from these two kinds of fuel must be different, but the effects seem to be the same.

¹ Case 8. Daniel Webster. — "September 8, 1851. Yesterday and Sunday were exceedingly hot, bright days; the heat affected my eyes

So much relief do some get during dark and cloudy weather that they declare that the darkest days are their brightest. This relief, however, should not be altogether attributed to the diminished light, for such days are more likely to be damp, if not rainy, and this diminishes or entirely stops another great enemy, the dust. Hot, dry, dusty, and windy weather, with a bright sun, is, on the whole, the combination most to be dreaded.¹

This is not true of all; some are much worse during damp weather; it produces chilliness, hoarseness, and

much after the catarrh fashion. I resisted the attack, however, by the application of ice.

"When the sun is very bright I am obliged to avoid going out on account of my eyes, except, indeed, when the sea is calm and I am protected by an awning. The bracing air of the ocean I find very beneficial."

Case 35. Henry G. Fay, Esq. — "In every case coming under my own observation, I have found that the hot sun adds fuel to the fire."

S. A. Wood, Esq., Boston. — "My first attack was while fishing in the northern part of Franklin County, Maine, among the Rangeley Lakes. I had slept about the middle of August in a barn on a hay mow, and rode the most of the following night, was chilly and took cold, was blowing my nose all the way. Next morning sneezing and running from the nostrils and eyes. From that time, now ten years ago, each year from the 20th to the 25th of August, I am attacked. It ceases about October 1st. One year I was in Farmington, Me., August 25th, and immediately after was attacked with asthma in Thomaston, Maine."

Case 77. — "Sunlight produces sneezing. I sneeze most on first rising in the morning; warm weather will increase the paroxysms."

Case 1. — "I keep in the shade. The sunlight makes me sneeze."

¹ *Case 1.* — "The attacks are aggravated by hot, dry, and dusty weather, especially while riding in a railway train. They are relieved during damp, rainy, or cold weather. The hotter and drier the season, the greater are my sufferings."

Case 4. — "I am better during and after a cold rain-storm than in dry and dusty weather."

I have myself long noticed that I am better on a rainy day than on one that is bright.

Samuel Batchelder, Esq., in a note suggesting that the disease may depend upon the influence of the pollen of certain plants which flower at the critical period, says: "My own experience has been that damp, or even stormy weather, such as may be supposed to diminish the floating of such particles in the atmosphere, has uniformly afforded relief, even when the complaint was most severe."

cough, and they are obliged to confine themselves to their houses and comfort themselves with artificial heat.¹

During the critical period, fruit of various kinds — pears, peaches, plums, melons, and the stalks and flowers of potatoes — are all charged by some individuals with producing paroxysms. Some are liable to attacks after eating or smelling one kind of fruit, to others several kinds are injurious, but by far the greater part of the subjects of catarrh are annoyed by none of these things.²

¹ *Case 45.* Dr. Anson Hooker's case. — "She is better in quiet, dry weather; is worse in damp, windy, or dusty weather. Heat or cold does not disturb her."

Case 8. Daniel Webster. — "In such a day as this, — a northeast rain-storm pouring, — I cough a little and am as hoarse as a frog.

"If the weather is wet or damp, I must stay in the house, and have a little fire to prevent fits of sneezing and nose-blowing."

² A lady of New Bedford who had attacks of catarrh from perfume of flowers, and the smell of decaying vegetation in the fall of the year, had a run of Hay Fever in its most annoying form, brought on, as she believes, by sleeping for two nights in a room which had just been provided with a new straw floor matting.

Rev. P. A. Jay of Fairhaven, Conn. — "From earliest recollection to twelve or thirteen years of age the eating of musk-melon almost immediately deprived me of the power of articulation, lasting for about thirty minutes. Till the age of twenty-five the eating of any raw fruit or vegetables "thickened up" and irritated my throat exceedingly. Since then the effect is so slight that I often eat fruit sparingly."

Case 71. — When at home in Lynn, Mass., the touching of a peach, pear, or melon, will bring on the head symptoms: sneezing, watering of the eyes, irritation of the throat. The last eleven years of her life, during the catarrhal period, from August 20th to October 10th, has been at the White Mountains, principally at the Glen House, where she was entirely relieved, and could take fruit of all kinds freely. She was also relieved at Crawford's and the Profile House.

Case 38. — Suffered severely in Morristown, N. J., when the peaches were ripe; is always worse when in the presence of this fruit.

Case 75. — The smell of fruit — pears, apples, peaches, grapes — during August and September, will bring on an attack of asthma.

Case 11. Mr. E. F. Atkins. — Cannot eat fruit in autumn. Bartlett pears, which ripen early in September, produce, when eaten, itching of the throat, and impair the voice. But these troubles are less when the fruit is eaten without the skin. When in California, September, 1869, could eat fruit freely, especially pears.

Some are sensitive to the fragrance of flowers. While one suffers in "aromatic pain" from a rose, another enjoys the rose, but finds an enemy in the geranium or the heliotrope. This sensitiveness is not the same throughout the year; with most it is entirely wanting, except during the critical period, and as a general rule it is less in non-catarrhal regions than others.¹

Case 78. — Cannot eat tomatoes nor peaches at home, because of the soreness of the mouth and swelling of the lips they produce. Can eat both peaches and tomatoes at the White Mountains with impunity.

G. B. Ayres, Esq., Philadelphia. "I have never in the least been affected by the smell of anything,—flowers, fruit, etc. Not even by the smell of a good cigar, unless the smoke were too thick, when I would dislike it as I would other smoke or dust at all times. I do not use tobacco in any way."

¹ *Case 57.* Dr. Hooker's case. — "When eighteen years of age first noticed being affected by the aroma of roses. The following year while picking some roses, she felt an itching in her eyes — this was in the morning; — the itching increased, and in the afternoon was so intolerable that she asked medical advice. After this she could not be in a room where there were bouquets or many flowers, without itching of the eyes or other catarrhal symptoms. She has often been obliged to leave an omnibus when large bouquets were present. This state of things continued ten years before she began to have the regular Autumnal Catarrh. After this she was not so sensitive to the aroma of flowers, still she could not be much in their immediate atmosphere and not feel their influence. We can never have many flowers in the house unless covered with glass. I will add that all fruits in an uncooked state, except strawberries, inflame the mouth and throat, and bring on itching. If melons, tomatoes, etc., are sliced and placed upon the table, they must be removed. If she hands an apple or an orange, the eyes and nostrils are immediately in trouble, and this at any season of the year. She was subsequently at the White Mountains during the critical period, and was much less annoyed by these causes than when at home at any season of the year."

Case 1. — "I find that the scent of full-blown roses makes me sneeze, and once I was picking strawberries in a hay-field in July, and suddenly found myself attacked by a violent fit of sneezing and running of the eyes, but it soon left me after I had bathed my head in cold water, and retired to a cool room."

Mrs. J. A. T. — "Steam from the dishes at table will produce a paroxysm of sneezing and the rest of the train of symptoms."

Case 58. — In 1866 she left the White Mountain region October 1st, quite well, for Belmont, Mass.; remained a few days, and then went to Philadelphia. Immediately on her arrival she was seized with the usual

Some persons who have been debarred from fruit for the greater part of their lives, have enjoyed it freely at the White Mountains, even during the catarrhal period.

The Indian corn (maize) when in flower produces sneezing and other evidences of a paroxysm with some individuals, and also after it is fully ripe. The cutting of the stalks, or being among them, will have the same effect.¹ If the Indian corn were a cause of the disease, as a whole, it would appear at different times corresponding with the appearance of the pollen. Indian corn is planted early for summer use, and ripens more than a month sooner than the usual farm crop of this grain. But the disease does not appear sooner near the large cities, where this early crop is most abundant, than in the country. Besides, we must remember that the pollen which is supposed by many to be the most active cause, has already been thrown off before the latter part of August when this disease appears. It is true corn is not raised in any quantity in the mountains, but there are other places, on the great New York plateau, for in-

symptoms of Autumnal Catarrh, which did not abate until she reached New York a week afterwards, when she entirely recovered. The flowers were in full bloom in Philadelphia during her stay there.

¹ *Case 19.* — "My attack commences about August 15th, about the time the pollen appears on the male flower of the maize. It is aggravated by cutting the stalks of the maize in the first week in September, when the cough begins. This is worse nights and mornings. I have asthmatic breathing in September, at times severe, compelling me to sit up during the night."

Case 69. J. B. F. T. — "I had spent a part of the sensitive period in the Adirondacks, in the valley of Boreas River, from the 14th till the 29th of August, without a symptom. In coming home, when within fifteen or twenty rods of the first ploughed field, about fifteen miles from our camp, I commenced to sneeze, and in less than an hour the cold was in full blast." It is true that the Atlantic district of New York is more fruitful of Indian corn, averaging 32½ bushels to the acre, and here the Autumnal Catarrh flourishes. But the central and western district, including Madison County, yields 25 bushels to the acre, quite enough to have an influence upon the disease, if dependent upon it, and yet persons with the disease elsewhere here escape it.

stance, where it is cultivated in large quantities, and where this disease is not found. It cannot, therefore, be looked upon as more than a cause of paroxysms; indeed, the number of persons in whom it produces these effects is comparatively small.

Although the hay produces no ill effect, there are certain plants which flower later than the haying season, which are believed to have a very decided influence. The thistle, the golden rod, and especially the weed known as Roman wormwood, rag-weed, hog-weed, bitter-sweet (*Ambrosia artemisiaefolia*), are known to aggravate the disease and produce severe paroxysms.¹ It is said to affect horses when exposed to it, much after the fashion of catarrh in human beings.

The very general impression that the Roman wormwood is a cause of the whole disease, has led me to experiment upon its effects. In New England it flowers in the open air about the middle of August or a little later, and continues to flower till late in September; it is covered with a large quantity of a fine pollen which is constantly shed during the flowering season; an approach to it, during the critical period, will produce a paroxysm with a very large number of persons. This, with the fact that its flowering corresponds with the critical period, lends strength to the supposition that it may be a real

¹ Case 66. — "I believe the thistle and golden rod (*Cirsium lanceolatum* and *Solidago*) affect me, and when the frost has blighted them I breathe more freely; after three or four frosts I am entirely well."

Case 18. — Roman wormwood produces irritation in the throat and asthmatic breathing; he cannot work where it is; he is irritated even by passing in the road near a field in which this weed is growing.

Case 15. Edward Wyman, Esq. — Has observed that the proximity of Roman wormwood will bring on an attack; the odor of peaches seem also to aggravate the trouble. Damp night-air is prejudicial.

This plant is the only one that I have ever known to cause an attack in my own case; and this it will invariably do from very slight exposure.

J. A., of Laconia, N. H., has had a similar experience.

cause. It grows very generally in those regions where the disease exists, and most luxuriantly near the seacoast. It grows very sparingly in mountainous regions, and is there generally short and feeble.¹

Most causes of paroxysms, like fruit and flowers, cease to produce, with most persons, their specific effects, in non-catarrhal regions. With this plant it is not so; a majority of those exposed to it experience a paroxysm nearly as severe in the one region as the other.² These

¹ *Ambrosia artemisiaefolia* of Linnaeus (Roman wormwood, hog-weed, bitter-sweet) is thus described by my friend, Dr. Gray, the distinguished Professor of Botany in Harvard University: "Much branched (one to three feet high), hairy or roughish pubescent; leaves thin, twice pinnatifid, smoothish above, paler or hoary beneath; fruit obovoid or globular, armed with about six short acute teeth or spines. Annual. Waste places everywhere, July to September. An extremely variable weed with finely cut leaves, embracing several nominal species." *Manual of the Botany of the Northern United States*, by Asa Gray, Fisher Professor of Natural History in Harvard University, Cambridge, U. S. New York, 1859, p. 1.

² Early in September, 1870, I gathered in my grounds at Cambridge, Mass., some Roman wormwood in full flower, covered with pollen, taking the whole plant, stalk and roots. This was carried to the White Mountain Glen, about 1,200 feet above tide, where we remained till September 23d, in the afternoon. The parcel containing it was then opened and freely sniffed by myself and son. We were both seized with sneezing and itching of nose, eyes, and throat, with a limpid discharge. My nostrils were stuffed and my uvula swollen, without cough, but with the other usual symptoms of Autumnal Catarrh. These troubles continued through the night, and did not disappear till the afternoon following. Prof. Jeffries Wyman, who was of the same party, but did not sniff the plant, had none of the symptoms just described.

A portion of the same plant was sent to my friend, J. J. Dixwell, Esq., at the Waumbec House, Jefferson Hill, who has kindly sent me the following results:—

"Eight persons sniffed the plant. One was seized with asthma and stricture in the chest, and did not entirely recover from the effects until the next day. This person is severely affected with asthma, and particularly sensitive. One was attacked with catarrh, as he would have been at the same period at home, and the eyes were irritated for several hours; one had sneezing and coughing for some little time; two had sneezing only. One had sneezing and watering of the eyes; one had only irritation of the eyes for some time; one experienced no effects whatever; eight other persons were in the house at the time who are subjects

are the principal facts in support of the theory that it is a cause of the whole disease.

On the other hand, it has been planted in February, has flowered in July, a full month before the ordinary time of catarrh, and kept in the sleeping-room of a subject of the disease while in flower, without effect.¹ It has also been gathered with care when in full flower, preserved in its dried condition in a bottle, and sniffed late in February, also by a subject; it was followed, in one experiment, by some stuffing of the nostrils and discharge of a limpid fluid, but perhaps no more than might follow many other irritations of the nasal mucous membrane; in other experiments it had no effect.² It is very widespread, and is found from Canada to Georgia, and from Maine to the Rocky Mountains, covering many places where Autumnal Catarrh is not known to exist.³ It is

of the disease, they did *not* sniff the plant, and were not similarly affected."

Mr. Dixwell says, "I think I have been quite as much affected by pears, peaches, and apples in my room, as I was by the Roman wormwood."

Three years after I repeated this experiment with the same specimen. I returned from Europe quite well October 6, 1873. On the 27th I sniffed the Roman wormwood; it produced the same catarrhal effects as just related; they disappeared in two days. February 10, 1874, the experiment was repeated without other effect than what might be produced locally in the nostrils by any irritating powder. At this time the ground was covered with snow, and the thermometer at times below 0.

¹ In February, 1865, I planted in a pot a quantity of the seed of the Roman wormwood (*Ambrosia artemisiæfolia*), and kept it in a warm room; as soon as the weather was suitable it was placed out of doors and properly cared for. It began to bud early in July; 16th July it was in flower; the pollen was apparent but not copious. It was then placed in my sleeping-chamber, and there remained until it ceased to flower. Nothing which I could attribute to its influence followed.

² I made the experiment upon myself February 25, 1871. I have since repeated the experiment three years in succession, and with the same effect; we may therefore fairly conclude that it gives rise to the peculiar symptoms during the critical period only.

³ Dr. Gray has kindly furnished me with the following places from which he has specimens in the Herbarium of Harvard University; Halifax, Nova Scotia; Bridgewater, N. Y.; the New York and Ohio plateau,

true the plant may have different properties in different regions, as is the case with Indian hemp and the common hemp of the United States, and also, to a certain extent, with tobacco. I am inclined to give weight to this view.¹ But still, with our present knowledge, Roman wormwood can be regarded as only a very active and general cause of paroxysms, not a cause of the whole disease.

Attacks like those of Autumnal Catarrh may be produced undoubtedly by many other vegetables besides those above mentioned. One case, that of a lady, fell under my own observation, in which they followed immediately after the eating of a few chestnuts; they had also occurred previously, after eating filberts and English walnuts, and after a meal of buckwheat cakes. The only nuts she can eat with safety are almonds and hickory nuts.²

1,000 feet elevation, common; Buffalo, N. Y.; Illinois; Saskatchewan River; Spoken River; Great Plain of the Columbia, Washington Territory; Pennsylvania; Blue Ridge; Table Rock; South Carolina; Cooper River; Texas; Mexico; Cuba. It is not found in England, France, or Germany.

Prof. J. D. Whitney's *Botany of California*, Cambridge, 1876, is authority for the existence of Roman wormwood in Oregon, and also, probably, sparingly in California.

Prof. Asa Gray has shown that the plants of New England and Japan strongly resemble each other; it would be very interesting to know if this form of catarrh exists there.

¹ In September, 1871, at Woods's, 1,310 feet above sea, on Moose River, near Randolph Hill, I passed without disturbance a garden in which Roman wormwood was growing quite luxuriantly for the White Mountain region; my son had also been frequently at the same place at the same season, with impunity. I cannot but think it would have troubled us if it had the same properties as that raised in Cambridge and sent to the Waumbec House at Jefferson.

September 5, 1872. Experiment repeated by same persons at same places, with wormwood about eighteen inches high, in seed, without effect.

On my return to Cambridge, it was also in seed, but I and my son had unmistakable signs of catarrh.

The Roman wormwood grown at Peterborough, Madison County, N. Y., E. S. Dixwell, Esq., says, produces no ill effect upon him. It also grows at Colorado Springs, Colorado, 6,000 feet above sea, and some persons have suffered there.

² October 13, 1870, Mrs. R., light hair and light complexion, about

*I have no more severe attacks of catarrh
without certain degrees of sexual excitement
which is not the case with other vegetables.*

In considering these exciting causes of paroxysm, we must remember that they produce their effects, as a general rule, only during the usual season of Autumnal Catarrh, from the middle of August to October, or, in rare instances, somewhat later. They produce no effect in midwinter. It is clear, then, that other influences are at work during the catarrhal season besides these; something that has prepared the system for their injurious effects. It may be one, or more probably several, of the conditions discussed in the preceding chapter. As we have already remarked, this would be in accordance with what we observe in affections of the digestive organs. Articles of food which at other seasons of the year are perfectly innocent, will, during summer, bring on attacks of the diseases peculiar to that season.

§ 44. The poisonous influence of some vegetables is beyond doubt. The two varieties of *Rhus*, *Venenata* and *Toxicodendron*, it is well known, produce violent and long continued affections of the skin in some persons who

thirty-five, ate two raw chestnuts and two or three boiled ones. In about five minutes, while walking home, had pricking in the mouth, throat, ears, and eyes, with lachrymation, also obstruction of the nostrils and a watery discharge. These symptoms increased, and in about five minutes more had a violent cough, with slight expectoration and sneezing. The throat was obstructed apparently by spasms, making it difficult for her to swallow. She had pain in the abdomen resembling colic. I saw her in half an hour from the beginning of the attack. She was then coughing violently, the nostrils were obstructed, the conjunctiva red, the vessels injected, the velum red, and the uvula swollen, most near the velum. There was still pain in the abdomen, but less. These symptoms gradually subsided, and in an hour from the commencement had nearly ceased.

She had a similar attack when four years old, after eating hazel-nuts; this was repeated two years ago. Cannot eat filberts or English walnuts, or other nuts which have been in the same dish with them, without these symptoms. Almonds and hickory nuts are the only nuts she can eat with safety. Cakes of buckwheat, when eaten, produce violent sneezing, watery discharge from the nostrils, irritation and redness of the eyes, and pricking of the throat. These symptoms begin within an hour after the meal, and continue two or three hours. This lady was not a subject of any form of annually recurring catarrh.

handle the plant, and in others who merely pass near it, especially in the sunshine, affections so closely resembling erysipelas that they are only to be distinguished from it by the absence of constitutional symptoms.

The question as to the probable origin of this disease, whether in the vegetable or animal kingdom, inevitably comes up and requires examination. The principal reasons for a belief in the vegetable origin are as follows:—

1. It has a fixed season for its appearance, when the heats of summer have developed and ripened most of the plants of the regions where it exists. The time of commencement does not vary more than the time of flowering of many plants.

2. The fixed time of disappearance, which is when vegetation declines, or when it has passed its flowering stage and the seeds are developed.

3. Its disappearance immediately upon the appearance of a killing frost. This is also strengthened by the fact that a person who is perfectly well in a non-catarrhal region, or in a place where there has been a frost, will be at once attacked, during the critical period, if he visits a place which has had no frost, and again as quickly relieved if he returns.¹

¹ Case 75. Mrs. B. — She is relieved in Philadelphia as soon as frost appears, about the 25th of October. In August, 1866, she was at the Glen House completely relieved; the first week in September she went to Saco, and was so ill that she returned in two days, and was at once relieved, and so remained. No frost had occurred in Saco. September 25th, she again went to Saco and she was well; a frost had occurred. She went to Philadelphia in October, and was again troubled; there had been no frost there. The trouble continued until frost.

Dr. Hooker's case. — Her troubles last till the first good frost in October. This is a godsend to her; and she is at once relieved. Compare the experience of Mrs. J. B., case 58, p. 125, note.

That some persons get relief before the appearance of frost is certainly true; but it is also generally true that vegetation has then begun to decline, and it is not unreasonable to suppose that the cause or causes may already have gone through their active stage. So far, then, this is an argument in favor of vegetable origin.

4. The relief, to a certain extent, sometimes obtained in the middle of large cities where there is little vegetation.

5. The existence of the disease in certain regions only.

6. Its entire absence at sea.

The last three arguments cannot be considered as of great weight, inasmuch as the conditions differ in many other respects besides the diminution or absence of certain vegetable influences.

§ 45. It has not been proved that the disease may not be of animal origin, and the following may be considered as reasons in its favor:—

1. Insects, productive of the disease, may exist upon the plants which flourish most during the catarrhal period, and die or become dormant at the same time and under the same influences. To this we do not give much force, for it is not probable that insects or their eggs would exist in the dried plant sufficiently active to produce promptly the effects following the inhalations of the emanations from Roman wormwood in its dried condition.

2. The eminent physicist, Helmholtz, states that for five years he found in his own nostrils during the June or "Rose Cold," from which he suffers, vibrios (infusoria usually classed with animals, but of doubtful origin), which are expelled after a violent sneeze, and exist at no other time. He has, he thinks, also proved that the disease may be prevented or arrested by a quinine solution, which destroys infusoria.¹

¹ From Virchow's *Archives*, vol. xlv., part 1, February, 1869, p. 101, for the use of which I am indebted to my friend, Dr. Calvin Ellis, I translate Helmholtz's letter. It is in the article on Quinine (*Pharmakologische Studien über Chinin*), by C. Binz, Professor at Bonn. "I have suffered, as near as I can recollect, since 1847, from a peculiar catarrh, called by the English 'Hay Fever;' the peculiarity of which is in this: that it makes its attacks during the hay harvest (in my case between the 20th of May and the end of June), that it ceases in cooler weather, and, on the other hand, quickly becomes very intense if the sufferers expose themselves to heat and sunshine. Then comes an extraordinary sneezing and a copious irritating discharge with a throwing off of epithelium scales. This increases after a

3. Dr. Charlton Bastian experienced all the prominent symptoms of "Hay Fever," after dissecting a parasite of a horse.¹

few hours to a painful inflammation of the mucous membrane and external nose; fever arises, with headache and great lassitude, if the patient does not withdraw from the heat and sunshine. In a cool room the symptoms subside as quickly as they came, and for some days there remain but a slight discharge and sensitiveness owing to the loss of epithelium. I remark here that all other ~~years~~ I have very little tendency to colds or to catarrhs, while the 'Hay Fever' has never failed for twenty-one years to attack me at the time of the year just mentioned, neither earlier nor later. The case is extremely troublesome, and increases to an extremely severe indisposition if the patient is obliged to expose himself much to the sun.

¹ Dr. H. Charlton Bastian (*Philosophical Transactions*, vol. clvi., 1826, p. 583, note) describes the effects invariably produced upon himself, whilst working at the anatomy of *Ascaris megalocephala* from the horse: "Emanations from this animal had the most decided and poisonous influence upon me, and this not only when the animal was in the fresh state, but after it had been preserved in methylated spirit for two years, and even then macerated in a solution of chloride of lime for several hours before it was submitted to examination. I first examined this species in the spring of 1863. The effects were a greatly increased secretion from the Schneiderian membrane with irritation of it, causing continuous sneezing, irritation of the conjunctiva, itching about the eyelids and caruncula lachrymalis; great desire to rub them. Rubbing immediately gave rise to a swollen and puffed condition of the eyelids, swelling of the caruncula, and extreme vascular injection of the conjunctiva; if the rubbing was persisted in, actual effusions of fluid would take place under the conjunctiva, raising it from the subjacent sclerotic and cornea (?). A few minutes would suffice to produce these serious effects upon the eyes, but after a little bathing with cold water and rest in a recumbent position for a couple of hours, they would again have resumed their natural condition. At the same time that these effects were produced upon the mucous membrane, the skin of the face and neck was also affected so as to cause a sensation of itching, something similar to what exists in a mild attack of nettle-rash." Subsequently he had a species of asthma. "My system became at length so sensitive to the emanation of this animal, that I was even unable to wear a coat which I had generally worn during these investigations, without continually sneezing and suffering from catarrhal symptoms. In two months the symptoms ceased, and did not return till the next May, when it continued six weeks into June. Dr. Schneider and other anatomists were not affected in this manner."

This attack strongly resembles the June Catarrh of England, and as it occurred at the usual catarrhal season, it might well be questioned whether it was not that disease instead of the effects of the parasite.

4. The emanations of some animals produce asthma and spasmodic cough in certain persons.

"The odd connection of the disease with the time of the year, led me to think organized beings might be the cause. On examining the secretions during the last five years, I have found regularly certain vibrio-like bodies, which I have not observed in my nasal secretions at any other time. In the accompanying drawings I have figured the most common forms. They are very delicate and small, and can be seen only with the immersion lens of a very good Hartneck's microscope. The characteristic of the commonly isolated and single joint is that it contains four nuclei in a row, of which two are more closely united pairwise. The length of the joint is 0.004 mm. On warming the object glass they move with moderate activity, sometimes only quivering, sometimes forward and backward, shooting in the direction of their long axis; in a cooler temperature they are very sluggish. Sometimes they are in rows, side by side, as also in branched rows. Kept some days in the damp chamber they vegetate still more and become larger and more distinct than just after their discharge. It is to be remarked that only those secretions contain them which are discharged by strong sneezing, not that which flows out by drops. They seem to be firmly seated in the side-holes and recesses of the nose.

"When I received your first observations on the poisonous influence of quinine upon infusoria, I immediately determined to make an experiment, on the supposition that the described vibrios, if they were not the cause of the whole disease, they might, by their motions and products of decomposition, make it much more uncomfortable. For this purpose I made a saturated neutral solution of sulphate of quinia, which does not contain much of the salt (1.740), but is sufficiently active to produce a moderate burning of the nasal mucous membrane. I allowed about four centimetres to flow from a pipette into each nostril, while I lay upon my back with my nostrils turned upward. Then I moved my head to and fro that the fluid might flow about in all directions. When I stand upright the rest flows over the velum palati into the throat.

"The desired effect was immediate and continued for some hours. I could expose myself to the heat of the sun without an attack of sneezing and the other uncomfortable symptoms. The repetition, three times daily, of this application, sufficed to keep me free under the most unfavorable external circumstances. The vibrios then ceased in the secretion. If I only go out at evening an application before going out is sufficient. After a few days of treatment the symptoms ceased entirely; if I omit the application the symptoms return again until the end of June approaches.

"The first experiment I made with quinine was in 1867; this year (1868) I have used it from the beginning, so soon as the first trace of the disease showed itself in May, and thereby succeeded in preventing its development.

My friend, Dr. Hagen, of the Zoölogical Museum of Harvard University, writes me: "There are some caterpillars with very obnoxious hairs, and I remember that in Germany at certain times when the caterpillars are very frequent, it was impossible to drive through the forest without an inflammation of all exposed parts. The late Professor Ratzburg has given a history of his own sickness, he believed produced by caterpillar hairs. He lost a part of his vomer."

Cows, cats, and dogs produce asthmatic symptoms in certain individuals.

These reasons, although they are not without weight, cannot be admitted as sufficient to prove an animal origin of this disease.

§ 46. The germ theory of disease may be called upon to afford a solution of what cannot but be admitted to be a difficult question. The relations of germs to disease, long ago suggested, was set forth many years since in this country by Dr. J. K. Mitchell of Philadelphia, and

"I have hitherto refrained from publishing this fact, because I had found no other patient upon whom I could try the experiment. Still I believe the very extraordinary regularity of the yearly return and yearly course of this disease, leaves no doubt that we have really to do with a very definite and quick influence of quinine upon the course of it; and this appears again to make my hypothesis very probable, that the vibrios living in the nasal secretions, although they may not be any indication of the specific character of the disease, and are of very frequent occurrence otherwise, still are the cause of the quick increase of the appearance in warm air, inasmuch as they are thereby aroused to greater activity."

Vibrios, similar to those figured and described in this letter, are very commonly observed in the nasal secretions, and are by no means in this country confined to any particular season of the year. If they infect the deep nasal recesses, it is not easy to see how moderate changes in the temperature of the air could reach them; nor is it easy to see how an application of quinine to the nasal mucous membrane could poison vibrios in the eyes, which often suffer quite as much as the nose.

In Autumnal Catarrh the application of quinine in the manner proposed by Helmholtz for "Hay Fever," produced a good deal of irritation of the mucous membrane, but no relief of the symptoms; when applied in a different way, it is generally followed by marked relief.

has recently excited a good deal of discussion. It is certainly not improbable that germs (if we include under this indefinite term minute organisms both animal and vegetable) may be the cause of many forms of disease. Vegetables, like the oak, the cedar, and the rose, become diseased in consequence of the eggs deposited by insects. Flies, silk-worms, and other insects have upon and within their bodies various vegetable parasites; and some skin diseases of the human body are also believed to be caused by certain plants; in other cases, whether the plant is cause or effect, or simply an accompaniment, is uncertain.¹

It has been clearly shown by many observers that inoculation of the proper vegetable parasite will produce *favus*, and the destruction of the parasite will cure the disease. This inoculation is not by the transfer of a virus, but by the transfer of reproductive germs, which grow and reproduce their like in a new soil. It has also been demonstrated that such germs may be dried and blown about in the air, fall upon new individuals, develop and reproduce the disease.

It has been demonstrated that fermentation and putrefication are chemical processes, both produced by vegetable organisms, the one by the yeast plant and the other by bacteria [a vegetable which multiplies by divi-

¹ According to Hebra, the following diseases are caused by vegetable parasites:—

1. Favus, (a) Herpes tonsurans, (b) Pityriasis versicolor.

2. Alopecia areata.

Isidor Neumann — Favus, Herpes tonsurans Pityriasis versicolor.

Eczema marginatum, Nail fungus, Sycosis Parasitaria.

Nail fungus and favus may be the same. Kuchenmeister, *Manual of Parasites*, vol. ii. p. 220.

Eczema marginatum is only occasionally accompanied by fungus. I. Neumann, *Lehrbuch der Hautkrankheiten*, p. 403, Vienna, 1870.

Remak has proved that transplanted favus fungi will produce the disease in healthy skin.

These cryptogams are believed to be wafted about in the air as well as transferred in other ways, and most frequently affect those in damp rooms on the north side of houses.

sion and not by budding], and that both of these plants may be dried, blown about by the wind, and yet each produce in a proper medium the chemical actions peculiar to it. The vitality of dried bacteria was first demonstrated by Professor Jeffries Wyman in 1871, and is amply confirmed by the admirable experiments of Dr. Tyndall¹ in 1876.

Still further, in the vast majority of cases in nature there is hardly a doubt that putrefaction is a result of contagion and produced by bacteria only. This contagion, and the consequent putrefaction, has been indefinitely prevented by means of cotton-wool, which sifts them out.

Vulpian and Devaine have shown that the blood containing bacteria will infect another animal when injected into the circulation more certainly than purefactive matter itself.

Chauveau and Cohn have shown that the active principle of vaccine lymph and small-pox lymph resides in minute spherical bodies, belonging to the genus *Micrococcus*. Dr. Oertel of Vienna and others have described another form of micrococcus in diphtheria, an inoculation of which will produce a diphtheritic disease starting from the point of inoculation.

The potato-rot is caused by a microscopic fungus, *Peronospora infestans*, multiplying by spores, fructifying on the surface of the leaf and falling upon the ground is carried by the rains to the potato beneath. *it*

Bacteria have been found in the human body in certain diseased conditions, but with regard to their influence as a cause of disease much uncertainty exists.²

¹ Prof. Tyndall on Germs. *Nature*, February 3, 1876.

² Dr. Lionel S. Beale says (*Diseased Germs*, p. 63): "In every part of the body of man and the higher animals, and probably from the earliest age and in all stages of health, vegetable germs do exist. These germs are in a dormant or quiescent state, but may become active and undergo development during life, should the conditions favorable to their increase be manifested. Probably there is not a tissue in which these germs are not, nor is the blood of man free from them." Page 64.

Under the influence of these and other facts, the tendency of the medical profession at this time is towards some form of a germ origin of disease.¹

That germs of various kinds, both animal and vegetable, and in great quantity, may and do exist in the air, has been demonstrated. Pasteur and others have shown that pollen floats in the atmosphere, and recently Mr. Charles H. Blackley, M. R. C. S., England, found it at an elevation of 1,500 feet above the earth's surface. Dr. John Green of St. Louis observed a "sulphur shower," the pollen of a species of pine, which must have come from Georgia. That some will bear the heat of boiling water and extreme cold,² and others be dried and

Dr. Ferrier and Dr. Burdon Sanderson, F. R. S., at the meeting of the British Association at Edinburgh, 1871, read a paper *On the Origin and Distribution of Bacteria in Water, and the Circumstances which determine their Existence in Animal Liquids and Fluids*. It is there stated, that "their examination of the fluids of the body tended to show that these, in their normal condition, did not contain the germs of bacteria or other organisms."

Devaine, in 1864, discovered *bacteria* in charbon or malignant pustule in sheep; they have also been discovered in the same disease in man. [For a time it was believed they were the sole causes of these diseases; it is now known that they exist in typhoid fever and common boils, and are not probably the cause of malignant pustule or any other disease, but their development is simply one of the many effects of disease.]

¹ Prof. John C. Dalton on the *Origin and Propagation of Disease*. Appleton & Co., 1874. The best statement we have yet seen of the evidence with regard to the germ theory of disease.

² Professor Wyman's experiments "on living organisms in heated water:" Exp. xv. Thirty-two flasks containing a boiled solution of "extract of beef" were arranged in six series, and boiled for different times, as seen in the following table:—

Series.	No. of Flasks in each Series.	Time Boiled.	Day on which Infusoria appeared.
		<small>h. m.</small>	
I.	5	0.30	1, 1, 2, 2, 2
II.	5	1.00	2, 2, 2, 2, 2
III.	5	1.30	1, 2, 2, 2, 2
IV.	5	2.20	2, 2, 3, 3, 2
V.	5	3.30 }	2, 2, 2, 4, 4, 4, 4
VI.	7	4.00 }	

blown about in the atmosphere without losing their vitality, has also been proved.¹ That some plants, like the "beer-plant of California," can be thoroughly dried, and transported long distances, and yet, after a considerable time, again produce their chemical effects, is well established. There is sufficient opportunity, therefore, for these germs to reach the human body, and be drawn into it through the mouth, the nose, or fall upon the eyes or the skin, and still retain their vitality.

As to the assertion that certain vegetable organisms have been found growing in profusion where intermittent fever exists, and that this fever is not found where these plants are wanting; that it is the germs of these plants which are the true cause of intermittents; that measles

From this it appears that infusoria appeared within four days after boiling four hours. "In pushing the experiments still farther, we have not found that infusoria appeared in any instance, if the boiling is prolonged to five or six hours." *American Journal of Science and Arts*, vol. xlv., September, 1867.

The lower kinds of algae live in thermal springs at 208° F

The egg of the canker-worm will bear a temperature below zero, without freezing or losing its vitality; but if it be crushed at this temperature, it immediately freezes.

¹ I quote the following experiment of Professor Wyman, one of many made with reference to this question of the vitality of dried bacteria:—

"August 3, 1871. In six similar vessels (all clean) was placed a weak solution of Liebig's extract of beef; they were all boiled five minutes. Dust from dry packing straw, which had been a long time dry, was added to the beef extract in three of the vessels; the other three without addition were kept as criteria. All were capped with paper and set upon a shelf equally exposed to light and heat. August 4th. The three to which dust had been added contained an abundance of vibrios, bacteria, germinated spores of mould, and some ciliated infusoria (*Paramecium*); the other three vessels contained nothing. August 5th. Vibrios and bacteria alone seen in the vessels without dust; in the other series, the infusoria mentioned above existed in still greater abundance."

From this it appears that bacteria must have been added to the three vessels, otherwise they would not have appeared in all of them so much sooner than in the other three to which nothing had been added. That these bacteria had been and were still desiccated, when added, is beyond doubt. If boiling kills bacteria, then those which appeared in the other three vessels must have been derived from the air.

in the United States army was caused by a fungus in straw, we can only say that the assertion has not been confirmed.¹ So, also, of the assertion that the germs of contagious diseases exist in the air, and have been strained out of it, leaving a perfectly harmless atmosphere.² Until these statements, however confidently ex-

¹ Dr. J. H. Salisbury, in the *American Journal of Medical Sciences* for January, 1866, states that he has found in the saliva of those suffering from intermittents, certain species of palmellae which grow in malarious soils, and produce intermittents; that they rise from the earth at night and fall in the morning; that where they are there is intermittent; that the white kind produces mild intermittent; the red congestive chill; that they are excreted in the urine and in the perspiration; that a treatment founded on the palmellae is so successful that "a paroxysm never need occur after the commencement of the remedies." As these and many other equally remarkable statements have not been confirmed either by Dr. S. or any other observer, although it is more than ten years since they were first published, they are of little worth in this discussion.

Dr. Salisbury is also of opinion that measles is produced by the action upon the human system of a peculiar fungus developed in decayed wheat-straw, and cites an example. He also believes that he has produced measles by inoculation with this fungus (*American Journal of Medical Sciences*, July, 1862). Dr. Woodward remarks that measles have broken out in camps where no straw was used by the men, where they lay on cedar twigs or India-rubber blankets, and where the sources of contagion could be traced. It has prevailed in camp almost exclusively among those from the rural districts, — those who, as children, had been most frequently exposed while playing upon the straw; the fungus, a form of penicillium (*penicillium glaucum*) widely diffused, is abundant in the grain stacks and in every stable where straw is used for bedding. Attempts to repeat the experiments by inoculation entirely failed in Dr. Woodward's hands, although he used the penicillium produced as described by Dr. Salisbury, and which microscopically was identical with it. Dr. Salisbury's observations were made when measles were rife. See J. J. Woodward, *On Camp Diseases*, p. 275.

Here, also, it must be admitted that more observations, more carefully conducted, must be obtained before we can assent to the proposed theory.

² Dr. Tyndall, in a recent lecture on *Haze and Dust*, expresses his belief confidently that the contagious element exists in the atmosphere in the form of germs. "As a planted acorn gives birth to an oak competent to produce a whole crop of acorns, each gifted with the power of reproducing its parent tree, and as thus from a single seedling a whole forest may spring, so these epidemic diseases literally plant their seeds, grow and shake abroad new germs which, meeting in the human body their proper

pressed, have been strengthened by more observations carefully made, we cannot admit them as evidence in support of the germ theory of disease, however probable it may be.

There is no evidence that the germ theory of disease as above stated, can give us an explanation of the cause of Autumnal Catarrh.

We have no evidence of its contagious or infectious properties; it is strictly endemic, and cannot be transferred, so far as we know, from place to place by individuals.¹

§ 47. But even if it cannot be shown that germs recognizable by the microscope are connected with this disease, we are not therefore to infer that it is not excited by vegetable influences of some kind; for we know that several severe diseases or poisonings are so produced, where neither the microscopist nor the chemist can furnish any evidence of the cause.

food and temperature, finally take possession of whole populations." That this may be so cannot be denied, but it is safe to say it is as yet not proved of it.

These germs and all other solid particles in the air, he assures us, can be strained out by means of "a handful of cotton-wool," and the remaining air when examined with a beam of electric light, is found to be "optically empty. The application of these experiments is obvious." If a physician wishes to hold back from the lungs of his patient, or from his own, the germs by which contagious disease is propagated, he will employ a cotton-wool respirator. I should be most willing to test their efficacy in my own person." — *Scientific Address*, by Prof. John Tyndall, New Haven, Conn., pp. 28–32.

That particles of various kinds can be thus removed from the air can be demonstrated, but it can hardly be safe to trust to a protection which covers the mouth and nose only, unless it can be shown that contagion or "contagious germs," with which Dr. T. tells us the air is filled, cannot act on the body through the skin or through the ears, or falling upon the eyes cannot be carried by the transparent fluid constantly flowing over these organs into the nostrils, and so into the throat.

¹ Rev. H. W. Beecher says that three persons who have never had Autumnal Catarrh, after being a few days at the Twin Mountain House, where are several patients [September, 1872], have experienced symptoms resembling it. Mr. B. asks, Is it contagious?

§ 48. Is Autumnal Catarrh a "self-limited" disease? Has it a certain succession of processes, to be completed in a certain time; which time and processes may vary with the constitution and condition of the patient, but which are not known to be shortened or greatly changed by medical treatment?¹

Medical treatment limited to the use of drugs does not usually shorten or greatly change it; medical treatment in its widest sense, including in this term everything which conduces to the welfare of the sick, quickly and effectually breaks it up. It is, therefore, self-limited only when not properly treated. The same may be true of other diseases now so classed.²

¹ *Discourse on Self-limited Diseases*, by Jacob Bigelow, M. D., Boston, 1835. The subject is discussed with great clearness and force.

² That certain diseases have a much more definite course and are less susceptible to medical treatment than others, must be admitted. It was taught in the early part of this century by Pinel, one of the most philosophical of medical writers, and one who studied carefully the natural history of disease. *Nosographie Philosophique*, 4th edition. — Introduction, p. xxxi.-p. 299. *Medicine Clinique*, p. 321, "Action and Expectation in Disease."

A classification like that proposed has a practical value. But of late this view has been pressed to a point where it seems to me there is danger of attaching to the expression "self-limited," ideas which may lead to carelessness or even fatalism in treatment. To this we oppose the following considerations: —

The proposed classification is imperfect — all attempts at classification of diseases are imperfect. Diseases are deranged physiological processes; they are individual in their character, in their varieties, their complications, their severity, and requisite treatment. Groups of diseases have no well-defined limits, a classification like that in botany and zoölogy is, therefore, impossible. The classification proposed is a question of more or less.

It must be remembered that diseases of the same name vary in the number, succession, severity, and duration of their processes in different epidemics to a degree that makes it difficult to recognize them. In the days of Sydenham, scarlet fever was "an ailment — we can hardly call it more." What, therefore, may be true of a disease in one epidemic may not be true of a disease of the same name in another.

Although individual cases of all diseases which call for medical aid have been known to prove fatal, and death overtakes all at last, such cases are

vastly outnumbered by those which terminate favorably under proper treatment.

With such variations we cannot assign the number, nor the succession of processes, nor the duration essential to a "self-limited" disease; and even if we could, it would be of limited practical value, for ~~they~~ ^{they} are seldom simple; in a large number of cases they are complicated with other evils giving them adventitious strength; and of these complications, some, more formidable than the disease itself, are dependent upon circumstances under our control.

Physiological actions and their modifications which constitute disease, are under the unavoidable influences of external physical agents, and we may well doubt if any diseases are left to their own natural limits—it certainly has not been proved. These influences it is the duty of the physician to use for the welfare of the sick.

Erysipelas, classed as "self-limited," is a very different disease in its contagiousness, its processes and termination in a long-used, ill-ventilated hospital, from the disease of the same name treated in well-constructed buildings with pure air and healthy surroundings. The same may be said of hospital gangrene.

"If we divide with a cutting instrument the cellular or muscular tissue, we produce a self-limited disease." But what these limits shall be, whether this disease shall be cured by immediate union, union by the first intention, union by granulation, or even prove fatal, each with its own succession of processes and duration, will often depend, other things being equal, upon the hygienic conditions under which it is treated, whether in a crowded city hospital or in a well-constructed building with pure air in a healthy country. *or rather, the conditions of the surrounding environment.*

Small-pox, also classed as self-limited, besides being prevented or modified by previous vaccination or inoculation, can be changed in the amount of eruption and consequent fever by treatment. Still further, we have the testimony of good observers, that during its stage of incubation, when it must be admitted to have by so far obtained foothold in the system, its severity and danger may even then be modified by vaccination.

Intermittent fever, formerly considered self-limited, can now, with a good degree of certainty, be prevented, and in many cases, even in its most fatal form, arrested.

Lastly, that the sufferings from disease may be palliated and convalescence abridged by proper treatment, is admitted, or if not admitted, cannot be denied without abandoning the art of medicine itself.

But even if nature has given to some diseases a more regular succession and duration of processes than others, we should no more neglect the art of medicine than agriculture should be neglected because nature has given to plants a certain period of growth and certain limits of excellence. Careful observation, experiment, and study have greatly changed the latter; there is good reason to believe they will lead to great benefits in the former. On this belief rests our efforts towards an improved hygiene.

The classification of diseases as self-limited, although useful, must be held as provisional.

DIAGNOSIS.

§ 49. THE importance of recognizing this disease is obvious.

Its existence has been doubted, and still is doubted by many, even by physicians. The large number of cases here collected, and the details of symptoms given as much as possible, and at the risk of tedious repetition in the words of the patients themselves, especially when they are physicians, will, we think, leave no doubt in the minds of careful readers that it is a peculiar disease.

It is frequently misunderstood by patients who, notwithstanding its regular annual occurrence, have overlooked it, and supposed themselves suffering from a severe form of "common cold," arising from exposure during the changing weather of early autumn.¹ Physicians, also, have confounded it with common catarrh, or considered it one of its modifications almost necessarily, leading to errors in treatment.

That it is worthy of a separate place in the descriptions of disease, is proved by the diagnostic symptoms. It has a beginning, a middle, and an end; and a skillful observer may from its commencement predict its course and termination. When we consider the large number of cases now known to exist, an acquaintance with their diagnostic symptoms cannot but be of value.

Ordinary Catarrh — "*Common Cold*." From this it can be distinguished by the peculiar redness and itching

¹ Mr. Ames of Killingly, Conn., has suffered from Autumnal Catarrh for twenty years, but was not aware of its nature till three years ago.

of the eyes, nose, and throat; by the profuse discharge; the successive invasion of different organs; the spasmodic cough and asthma towards its close; its regular annual return, its fixed time of disappearance; the immediate production of paroxysms by certain irritants.

Bronchitis. The absence of headache, fever, and other signs of inflammation, and the predominance of symptoms connected with the eyes, nose, and throat. The absence of cough in the early stages; the absence of mucous and sibilant râles in the chest; its decided nervous symptoms; its regular annual return and disappearance.

Pneumonia. The absence of chills, headache, fever, and rusty expectoration; the affection of the eyes, nose, ears, and throat, with their violent itchings and profuse discharge; the absence of fine crepitus, bronchial respiration, bronchophony, dullness on percussion (the usual physical signs); its annual return, its fixed time of continuance.

Local Inflammation of the Eyes—Conjunctivitis. By the violent paroxysmal itching of the internal canthi; the sudden and intense redness of the conjunctiva with its injected vessels, and its equally sudden disappearance. The absence of soreness, pain, and granulations; the puffiness of the eyelids. Generally, the great local effect compared with the slight constitutional disturbance. Later in the disease the edges of the lids are affected with small pustules.

June Cold of the Northern United States—“Hay Fever” (Catarrhus Aestivus of Dr. Bostock). I have already remarked (p. 1) that in the Northern United States there are two forms or groups of annually appearing catarrh. Although this Essay is confined to the description of the autumnal group, the history of a considerable number of cases has been obtained of the June group, which generally commences at the beginning of the last week in May and ends with the first week in July.

Two cases are given as examples.¹ There are many points of resemblance between the two, — those at least which

¹ The following are cases of the severer and milder forms of the "Rose Cold" or "June Cold" as it appears in this section of the United States — New England.

Miss S. J. of Cambridge was born in Rhode Island and went to Cambridge when five years old. So long as she can remember she has had a cold in summer; at other seasons she is uncommonly free from them. She first noticed its connection with vegetation, roses especially, when eighteen years old.

The attack has commenced each year, for the past thirty years, about the 10th of June, or end of the first week in June, with watering of the eyes and nose, violent sneezing, sometimes compelling her to throw herself on the bed and so continue sneezing for several minutes; the nostrils are stuffed with a slimy adhesive mucus, sometimes with particles of blood, impeding respiration; throat dry and uncomfortable, but swallowing is not painful; great itching of the palate, throat, and ears, for relief of which the tongue is rubbed against the roof of the mouth and the fingers thrust into the ears. There is also a sense of oppression in the head. These symptoms usually continue throughout the disease. The eyeballs have a sense of squinting; their movement is painful, but without swelling of the lids.

After a week there is a feeling of suffocation added to the other troubles, which continues till the third week, when cough commences with slight wheezing, very little expectoration, but the cough sometimes sufficiently severe to produce vomiting. About the fifth week the sufferings all begin gradually to subside, the nasal troubles taking the lead, and by another week, the sixth from the commencement, the disease has disappeared.

The sense of suffocation is much relieved by going into the city of Boston, two miles distant, especially if the wind is east, but returns on leaving the city, even while upon the bridge over Charles River. She is generally better during an east wind. She was much more comfortable in Halifax, N. S., while living near the water. Attar of roses or a fresh rose produces sneezing but not the other symptoms, and it soon ceases. In going into a hay-field she has more than once been so affected as to become giddy and lose her sight, and been led out of the field, and on recovering go another way, avoiding the field and thereby escaping a paroxysm. She has been obliged to leave a party where the room was dressed with flowers. The hotter and brighter the weather, the more severe the disease; remaining in the dark greatly relieves her both as to eyes and nose. The whole face is very sensitive; going into the sunshine will produce a paroxysm of sneezing, so will tickling the face with a hair. She is always most comfortable with the windows closed. The disease differs from an ordinary cold in its intervals of perfect relief for an hour or two. Her father suffered severely from asthma.

belong to catarrh generally, — but there are also differences. The most obvious is the difference of season, the first being confined substantially to June and the second to September. Between these two periods, although many inquiries have been made, no considerable number of cases sufficient to make a group of annually recurring catarrh has come to my knowledge, nor do I know of the first being prolonged into the period of the second.¹ Among

My daughter, Mrs. C. F. Walcott, has always had good health and has been but little subject to ordinary colds. At twenty-two she began to suffer from catarrh during the cutting of grass in June and July. She is annually seized during those months with attacks of sneezing, obstruction of nostrils, and a flow from them of a thin limpid fluid, often requiring many handkerchiefs; watering of the eyes and swelling of the eyelids. These attacks are in the order just stated, and last from fifteen minutes to an hour. They are excited by passing a hay-field, or indoors if the cut hay is near by. They never occur at other seasons, when the grass is standing, or if it is cut while still short and not in flower, either before or after the usual season, except once in September when passing a hay-field, during the cutting of the rowen or aftermath. She never suffers from the fragrance of roses or other flowers. See my own experience, note, p. 39.

The disease is quite variable in severity in different years, and on the whole has of late become milder. She has now had eight annual returns.

For a description of the English form of the disease, by Dr. John Bostock, see the *Medico-Chirurgical Transactions*, vol. x. p. 161; vol. xiv. p. 437; G. L. Bayle on *Species and Varieties in Medicine*, p. 506, Classification 508.

Dr. A. W. Woodward of Chicago, Ill. — Has suffered since his eighteenth year, though for ten years it took the form of "Rose Cold" or June Catarrh. "Finally six years ago the June visitation was broken up by 'Jonas Whitcomb's' remedy, and I was congratulating myself on a cure when August came and brought with it the 'big brother.' Since that time I have no further trouble in June — save it all for August."

¹ Dr. G. M. Beard, whose elaborate work on Hay Fever reached me as these pages were going through the press, states that there is a well marked middle group occurring in July; if this be so, the separation of the June and September groups is established — any two groups between which there is a third must be separate. A description which confounds June Cold and Autumnal Catarrh does not exactly suit either separately, either in the time of attack, the causes of paroxysms, the geographical distribution, or the means of relief. It may be observed that Dr. Phoebus records no distinct group in July, although he mentions that a few cases then occur.

intense and cellular exudation

the differences may be mentioned the following: The June Cold is less severe and of a shorter duration; the eyes are less severely and less constantly affected; the cough is much less constant, and not spasmodic to the degree of producing retching and vomiting; asthma is less frequent at the close, but when it exists is sometimes more severe. The paroxysms of the affection are shorter and intervals of relief more complete. Paroxysms of Autumnal Catarrh are seldom produced by new mown hay, even when the grass is cut during the critical period, nor are flowers so distinctly annoying. In June Cold the new mown hay is the well marked typical cause,—the time of attack varying with the time of cutting the grass,—and the aroma of flowers is also generally annoying. It is not generally relieved in mountainous regions during the cutting of grass, or in regions free from Autumnal Catarrh, but is usually relieved at the sea-side and in large cities; the reverse of what happens in the other disease.¹ It can be traced quite far to the south, to Savannah, Georgia, and is probably more extensive geographically than Autumnal Catarrh.

Those who have June Cold are seldom subjects of Autumnal Catarrh. When June Cold has existed it has generally ceased on the appearance of the latter disease. So also some instances have occurred in which, after many annual returns of Autumnal Catarrh, June Cold has appeared and the latter disease has diminished.² In a for-

¹ A young lady of Bath, Maine, a subject of "June Cold," almost wholly averted it by staying in Bethlehem, N. H., the usual period of attack; but it was during the time of cutting grass at home.

² Dr. Anson Hooker's case. — "Mrs. H. at the age of eighteen first noticed that she was affected by the aroma of roses. The following year, while picking roses in the morning, had itching of the eyes, which became so intolerable by afternoon that she asked medical advice. After this she could not be in a room with many flowers without affection of the eyes and catarrhal symptoms. This state of things continued about ten years, when she began to have her regular Autumnal Catarrh, and the sensitiveness to flowers very materially decreased, but has not entirely disappeared."

mer chapter this has been referred to, and my own experience given in a note at page 31. This, while it indicates a similarity between the two diseases, indicates also that there is probably a difference in character. We certainly see this apparent antagonism between two similar but not identical eruptive febrile diseases.

These points of comparison have reference only to the disease as it exists here. I have never seen a case of "English Hay Fever."¹ I have stated (p. 2) that those

Case 40. — The yearly attack formerly commenced in June; now it commences between August 20th and 27th, and terminates September 10th to 20th.

Case 65. Mrs. M. — At sixteen had catarrh commencing in June and ending about July 4th, or during haying time. This occurred annually for seventeen years. Five years ago, after some irregularity in its period of termination, it ceased altogether, and a catarrh appeared about August 1st, when near Fall River, Mass. The three subsequent years she was in Oregon, Illinois, where it appeared August 17th, and this year (1866) while in Charlestown, Mass., August 24th.

Case 11. — Mr. E. F. Atkins at ten years of age had attacks of catarrh when in a field of new-mown hay, lasting two hours after leaving the field, with itching and watering of the eyes for an hour longer. About the same age he began to have catarrhal attacks commencing about August 20th, and continuing till the last week in September. These have been repeated to the present time, but the first attacks are much less severe.

Mrs. H. T. M. of Cambridge, at fourteen was attacked with a catarrh in June, which recurred annually for eight years. She then became affected with watering of the eyes and obstruction of the nostrils, sneezing, and a copious discharge of watery fluid. This commences annually August 18th, and disappears with frost. Since the commencement of the catarrh, which has now continued fifteen years, has had no recurrence of the June Cold.

Mrs. L. H. of East Pembroke has had attacks of Autumnal Catarrh since 1825, now fifty years annually, in August and September; forty-five years ago, after a severe illness in winter and spring, had for the first time a cold in June, which has returned each year since.

J. P. B. of Boston has had the two forms of disease for twenty-five years.

¹ Such comparisons may be of great importance. When the true pathological changes of typhoid fever were first pointed out by Louis in Paris, many disputes and great confusion arose from the want of a proper distinction between that disease and the English typhus. It was only fully cleared up when the two diseases were personally investigated by the same physician.

known to me as subjects of the June Cold of this country, and who were subsequently in England, or on the Continent in June and July, during the time they would have suffered here, did not suffer there.¹ This has left me in doubt as to the identity of the two diseases. They certainly differ in their respective causes.

If Autumnal Catarrh is compared with the description of Hay Fever in England, we shall find still wider differences. It seldom occurs after forty years of age. Dr Phoebus, in his excellent monograph, containing a careful collection of what is known of the disease, has no recorded case. The disease diminishes in severity as age advances, some groups disappearing entirely and the whole affection becoming indistinct. Dr. Gordon says hay asthma "is never observed in the later periods of life," an experience not admitted as universal by Dr. Phoebus, but which may be admitted as substantially correct when applied to certain groups of symptoms. This diminution is of rare occurrence in Autumnal Catarrh. (See chapter on Prognosis.) Mr. Charles H. Blackley, M. R. C. S., England, in his work on Hay Fever, shows that Hay Fever is produced by pollen of the order *Graminaceæ*. C.

¹ Mrs. J. D. A. — Had June Cold many years in succession, but escaped the year she was in Europe, and also the year after her return; since then the attacks have again become regular.

Case 58. Mrs. J. B. — Escaped entirely her June Cold during the four years she was in England or on the Continent, although both before and after these years she suffered in the United States. Since the commencement of Autumnal Catarrh, in September, 1850, the June Cold, from which she had suffered annually for sixteen years, has very much diminished in severity and in length.

Rev. J. H. W., who had been a subject of June Cold from early infancy, writes, "But it has changed. It always had begun in June and continued till the middle of July; but about ten years ago it began to reappear in autumn. Now it has almost transferred itself from June to September. *E. g.*, this year [1872] I have had two bad days, one in June and one in July. Last year it was about the same; but with September came three terrible weeks, part of which I had to "give up" and take my bed, and for the first time in ten years of preaching I lost a Sunday's duty from this cause."

e/ He knows of no other cause, and suggests, therefore, that the disease be called Pollen Catarrh or Pollen Asthma. Other writers are of opinion that it is caused principally by one kind of graminaceæ — *Anthoxanthum odoratum*, which, according to Professor Gray of Harvard University, has been naturalized here from Europe, and flowers from May to July. It does not cause Autumnal Catarrh.

With regard to the separate groups above mentioned, it may be remarked that we must expect some cases to occur, exceptions to the general statement. We must remember that classification is a mental abstraction. This is true of the classification of animals, plants, and crystals. Nature presents us with individuals only, and of these there is an infinite variety. When, therefore, we form classes or groups, we must not expect any sharply defined lines; one group gradually slides into another; and if this is true in natural history, generally, it must be especially marked in the classification of diseases which are derangements of physiological conditions.

It is proper that these differences should be known, and it is well that the two groups should be formed for our guidance in predicting the time of attack, the duration, and the direction in which to seek relief, all of which we believe differ in the two diseases.

These three questions, affirmatively answered, will determine the diagnosis.

1. Has the patient had several similar attacks?
2. Have they occurred annually at the critical period: August 15th—September 25th?
3. Have they ceased, or been relieved by change of residence, or by the occurrence of a frost?

§ 50. DIFFERENTIAL DIAGNOSIS.

COMMON COLD.

No itching of eyes, nose, or throat.

Slight lachrymation.

Sneezing moderate, not in paroxysms.

Conjunctiva slightly injected; no sudden attacks of redness.

No spasmodic cough; no asthma.

No annual return.

Not influenced by change of place.

ACUTE BRONCHITIS.

Headache, fever, signs of inflammation.

No itching of eyes, nose, or throat; no profuse discharge.

No violent sneezing.

Appetite diminished.

No annual return.

Not sensitive to certain plants.

Mucous râles.

Asthma rare.

No set time of disappearance.

AUTUMNAL CATARRH.

Violent itching of eyes, nose, and throat.

Profuse lachrymation, and profuse discharge from nostrils.

Violent and prolonged sneezing in paroxysms.

Conjunctiva very red; vessels much injected in paroxysms; sudden in attack and disappearance.

Cough spasmodic; asthma.

Regular annual return about August 15th; disappearing September 25th-30th.

Entire relief in certain places.

AUTUMNAL CATARRH.

No headache, or very slight; no fever.

Violent and sudden attacks of itching of eyes, nose, and throat; profuse limpid discharge from nose and eyes.

Violent and prolonged sneezing.

Appetite good.

Annual return at critical period.

Paroxysms produced by certain plants.

No mucous râles.

Asthma common towards end.

Disappears about last of September.

**JUNE CATARRH OF NORTHERN
UNITED STATES.**

Time of annual attack: May, June.

Affection of eyes moderate, throat occasionally sore.

Edge of eyelids not inflamed.

Eyelids not puffy.

Cough not spasmodic.

Asthma not common.

No itching of skin, no eruption.

Generally much relieved at the sea-coast, and in large cities.

Paroxysms generally produced by new-cut hay, and by the aroma of flowers.

Not generally relieved in the mountains during hay-making.

AUTUMNAL CATARRH.

Time of annual attack; August, September.

Affection of eyes, nose, and throat severe.

Edge of eyelids inflamed.

Eyelids puffy.

Cough spasmodic.

Asthma common towards close.

Itching of skin, with eruptions slow in healing.

Rarely relieved at the sea-coast, or in large cities.

Paroxysms not produced by new-cut hay; seldom produced by the aroma of flowers.

Entire relief in certain regions.

PROGNOSIS.

§ 51. It varies somewhat in severity in successive years. In early life the first attacks are often as severe as any subsequent ones; in other instances they gradually increase in severity as age advances;¹ in a very few it has pretty steadily diminished, and even become perfectly bearable, but it has not disappeared.² I know

¹ The four cases which follow all show an increase of severity as the attacks multiply:—

Case 58.—The cough and asthma have of late years continued longer, and even into the winter. The disease gradually assumed the form of chronic bronchitis, from which after several years she died. The last two years of her life she escaped the catarrh by change of residence.

Case 60. Dr. Derby.—She thinks the disease has increased in severity during the past few years; as a girl she had no cough.

Case 68.—“The annual attacks are increasing in severity.”

Case 19.—“I think my annual attack increases in severity and with more feeling of soreness about the chest.”

² *Case 7.* Dr. J. C. Hayden.—“I suffer less from the disease than I did in former years, and find that it commences later.”

Case 67.—“The attacks are becoming less severe, although she passes the months of August and September in Cambridge.”

Case 61. Mrs. S. B. Bradford.—“For the first eight or ten years the attacks were most severe; they have gradually been diminishing in severity the last ten years, but so gradually that I can hardly fix upon a precise period when they became less severe. But for the last year (1864–65) or two I hardly notice that I have more than a simple cold.”

Case 6.—Dr. Lyman’s second case would indicate that the disease has been modified since the first attack; it commenced at four years of age with asthmatic symptoms of great severity, and at eighteen had nearly disappeared. The case, however, is peculiar in several respects, and may have been of a different character from true Autumnal Catarrh.

Samuel Batchelder, Esq.—“I think it has gradually diminished in severity for many years past, but is quite as regular in the time and duration of its attacks.” This diminution, though moderate, continues to this year, 1876; he is now ninety-two—giving therefore a certain degree

of no signs which will enable us to predict its course in this respect. It does not seem to bear any relation to age, sex, strength, make of body or health.

It may be assumed that the predisposition, once developed into a full attack, although in some rare cases it may diminish somewhat in severity, will continue in a greater or less degree, through life. I have never yet met with a case in which it has failed to make its annual appearance so long as a patient remained in a catarrhal region. Instances are on record of persons arriving at extreme old age without escape.

The changes most likely to follow many repetitions are those affecting the nasal mucous membrane; a sensitiveness and an inclination to turgidity of the tissues, which are very apt to occur, independently of the causes usually producing catarrh. Similar changes occur in the bronchial mucous membrane, accompanied by a continuance of cough into the winter, which if they do not actually produce attacks of bronchitis generally aggravate them.¹ There is also a tendency to, what seems to me, a nervous disturbance of the heart, producing palpitation and irregularity, which may have an injurious influence upon one who has been the subject of rheumatism or cardiac trouble from other causes.

Such results are quite rare; the great majority suffer only at the annual return. Indeed, there is evidence that, the critical period once passed, very many persons are less subject than most people, during the remainder of

of hope to other subjects of the disease that they may possibly outgrow it.

¹ *Case 59.* — In 1859 apparently took cold from exposure just as the disease was disappearing, which produced an increase and continuance of the cough, for which she went to Savannah, Ga., where it disappeared in about six weeks.

Miss A. C. B. says: "It is my theory that people who have the catarrh are really better for having it than for escaping it. It seems to me to be so inseparable from the organization as to make it bad to avoid it."

the year, to attacks of bronchitis and catarrh from ordinary causes. Some even go farther, and assert that they believe themselves less liable to other diseases than most persons. This belief has possibly some foundation in truth, and may be admitted as evidence that the disease does not materially impair the general health.

The influence on longevity is a matter of interest to the life insurance companies. To them a cough is a serious matter, and asthma usually brings with it an increased premium, whatever be its cause; so, also, of a constant or frequently recurring catarrh. A medical examiner, not aware of the nature of the disease, may well hesitate with regard to a sufferer in the midst of the spasmodic stage, with its cough and asthma which has recurred at times for years, and moreover is a family trouble. Indeed, I have known the investigation of a case abruptly closed on the statement of these two facts alone. In such cases a more critical examination by one possessing a full knowledge of the disease, might secure to the offices the insurance of lives which would prove valuable to them.

Autumnal Catarrh, although it has the tendencies just mentioned, has but little influence generally, either of itself or its complications, in shortening life. There are many instances of exceptionally long lives among those who are and have long been subjects of the disease.

Daniel Webster was a subject for twenty years, to the last year of his life — he died at seventy; Chief Justice Shaw at eighty; another gentleman at eighty-four; and Samuel Batchelder is now ninety-two, and thinks the attacks less severe than formerly; another gentleman is now living at the age of eighty, having suffered from Autumnal Catarrh for thirty years. One lady, now eighty-one, has had it many years, and another died at seventy-nine, having suffered most of her life. An in-

spection of the table will show that twenty years is a very common duration.

The history of the disease, while it affords a pretty good prospect of a life-long periodical suffering, promises, for the intervals, good health, and gives the comfortable assurance that it does not materially shorten life.

TREATMENT.

§ 52. My principal object in this Essay is to give, as far as possible, the Natural History of Autumnal Catarrh. To the sufferer, the most important inquiry is, How it can be prevented or relieved. I think it must be admitted that a knowledge of its natural history has in this respect led to valuable results.

It must be borne in mind that the disease appears at a certain time, has a definite course, and terminates in all at about the same period, notwithstanding great differences in circumstances and modes of treatment. We infer, therefore, that in these respects it is very little under the influence of *medicines*. Indeed, no well authenticated case has come to my knowledge in which the disease has been completely broken up in the midst of its career, or its annual return entirely prevented by the use of medicines. By this I do not mean to say that it cannot be modified in severity by treatment, or that some of the symptoms cannot be removed. I believe they can be. This does not prove that specific remedies do not exist; but inasmuch as the disease is a bearable one, it is not worth while, with our present knowledge, to run great risks of life, or permanently deranged health, in pursuit of an object which, at best, is of doubtful attainment.¹

¹ Case 8. Daniel Webster. — In 1851, while in the White Mountains during the usual period of catarrh, he was prevailed upon by a clergyman who seems to have suffered from "hay asthma," to try a variety of remedies, among which were iodide of potassium, blue pills, Rochelle powders, iron, potash, and arsenic, until, as Mr. Webster says, "My system is so full of iron, potash, and arsenic, that my stomach has become deranged." "By the process I have lost flesh and am not a little reduced."

September 8th he again writes, "I have had rather a hard time. I have been able to keep off the catarrh so far, but it has called on me to take so

Fortunately, the study of the natural history of the disease has shown us a remedy which brings material relief in all its periods, — a removal to a non-catarrhal region. These regions, so far as known, have been defined in § 30. *This is the great, almost unfailing remedy.*

For complete prevention, the place of refuge should be reached a day or two before the usual time of attack, especially if the journey is by rail in hot, dry, and dusty

much medicine as a good deal to derange my system." He left Franklin and the White Mountain region and arrived in Boston September 15th, and was at once attacked. The polypharmacy was immediately discontinued by his usual medical adviser, Dr. Jeffries. Besides the derangements of the system, this treatment was otherwise unfortunate; it probably prevented his discovering that he owed his relief, up to that time, not to drugs, but to his residence meanwhile at the White Mountains and Franklin.

Case 76. — "One year, in September, I got iodide of potassium and syrup of tolu, and it seemed to operate as a specific for that year, but has failed ever since. I have tried most all the remedies known to the physicians of the various kinds of practice, such as burning saltpetre paper, smoking stramonium leaves, cigars, pennyroyal leaves, belladonna, *lobelia emetica*, chloroform, ether, morphine, and iodide of potassium; the last two, perhaps, have been of service. Most of these medicines seem more to divert the mind than afford any specific relief."

Case 16. — "I have been under homeopathic treatment, taken aconite and nux vomica and other things unknown to me, without relief."

Case 19. — "I have tried various remedies. I was under the care of a homeopath, who gave me little powders in September; they did me no good; nor am I aware that any other treatment has done me good."

Case 4. — "I have been treated by several different physicians during the many years I have suffered from catarrh, among them homeopaths, without other than very temporary relief."

Case 67. — "I have taken homeopathic remedies without relief; so of the inhalation of ether and other remedies.

Dr. E. J. Marsh. — "I have tried arsenic and quinine without effect, although I have commenced their use in anticipation of the usual period of attack. Helmholtz's remedy, the injection of a solution of quinine, gave me no relief. I also tried the inhalation of sulphite of soda with an atomizer, by which it was brought in contact with the mucous membrane of the air passages. The only effect was the precipitation of a severe attack of asthma."

My inquiries have always been directed to the treatment, and the answers are so clear as to the persistence of the disease, that further evidence upon this point is unnecessary.

weather ; for this combination is very apt to hasten an outbreak. If the disease has already commenced, relief can be obtained within forty-eight hours, and frequently sooner, after arrival. If it is far advanced, and local changes are produced, — inflamed eyes, nose, throat, and air tubes, — these effects will remain for a longer or shorter period, according to their severity, or the general health. It is not safe to return to any catarrhal region north of New York until the last week of September, or until after two or three killing frosts ; those who are very sensitive should not return until the first of October.

To places south of New York as far as Knoxville and Nashville, Tennessee, beyond which our observations do not extend, return should be delayed until the middle or third week of October, or until frost in those places.

A compliance with these conditions will secure, with very rare exceptions, very great relief if not complete immunity from the disease.

Persons who have been in a foreign country or on the ocean until near the time of attack and then returned home have been known to escape the disease for that year.

We have some evidence that an entire change of the usual habits of life has had a beneficial effect. Spending the usual period of trouble in camp under canvas, at a distance from civilization, and doing personally all the duties belonging to that kind of life, has given very considerable relief, — a well known fact with regard to asthma generally.¹

¹ Mr. F. C. Withers, New York. — From 1855 to 1860 had catarrh with severe asthma, beginning August 16th. In 1861 he joined the army and was in camp on Staten Island during the months of August and September ; he had very slight symptoms of the disease, with some cough.

Mr. E. M. Smith, Rochester, N. Y. — In 1861 was in France, Switzerland, and England ; returned home about the 1st of August, and had no attack that year ; the only year for eighteen years that he has escaped when at home.

§ 53. *Preventive Treatment.* Although we know of no medicines upon which we can rely for entire prevention, by their help the system can be put in a better condition for meeting the enemy. In this, as in other chronic affections (for we must suppose a peculiar condition which exists during the intervals of the attacks), the main object should be to build up the system. Hygienic measures, therefore, in the widest sense, are of more value than medicines, although these, too, are useful.

As the disease has more of a general than local character, and affects more deeply the nervous system than the mucous membrane, more is to be expected from constitutional than local treatment. More, also, is to be expected from mild measures than from those that are stormy, and almost necessarily debilitating.

Few diseases are so peculiarly individual in their character, hence no one method can be suited to all cases. Each is to be studied by itself; and as it is not subject to sudden and dangerous changes, time and opportunity are given for observation and experiment, and the patient may become, to a great extent, his own physician.

Great heat, and the direct rays of the sun, are to be avoided; they have a depressing influence upon the nervous system; and if extreme, and combined with fatigue, are of themselves dangerous. In a moderate degree they lessen the powers of resistance. Avoid the smoke and dust of the railway, and the dust of the street. The sleeping-room should have an open fire-place, should not be exposed to the afternoon sun, and after being well aired for an hour in the early morning, should have the windows and doors closed, and kept closed, so that the air shall be as still as possible until the following morning; any movement in the air is annoying. We think the still air allows the injurious particles to subside; but whether this be so or not we are satisfied that this course

has given us a good night's sleep and a better condition in the morning.¹

The diet should be nourishing. Abstinence from animal food reduces the strength and aggravates the symptoms. Alcoholic stimulants do not defer the attack, and, so far as my own observations extend, are rather a detriment. Various experiments have been made on the quantity of liquids drank, on the supposition that it may modify the flow from the nose and eyes. Abstinence for many days in succession did not diminish it, nor was it increased by an excessive use of liquids.

The sensitiveness of the skin is so noticeable, that cold bathing and cold shower-baths have been used, in the hope that this sensitiveness would be lessened or removed, but without marked success, except so far as they are agreeable. Many persons, especially the subjects of Autumnal Catarrh, bear cold shower-bathing badly; the system does not react, and they remain a long time chilled, a state of things almost necessarily injurious.

Warm clothing; flannel next the skin during the month of August, and increased while the disease is in progress, is of great importance.² It protects from sud-

¹ Prof. Tyndall has shown that particles of all kinds suspended in the air soon subside in "closed protecting chambers," and in three days all dust completely disappears, leaving the chamber optically empty. See in *Nature*, January 27, 1876, Professor Tyndall's paper, "On the Optical Deportment of the Atmosphere in reference to the Phenomena of Putrefaction and Infection."

Dr. S. D. of Laconia, N. H., writes: "My usual practice has been to close the windows of my sleeping-room before sunset, and having bound a wet towel [the colder the water the better] around my head, with a light flannel outside, I have very rarely failed to get a good night's rest, frequently sleeping till late in the morning."

² Case 20. W. H. Y. Hackett, Esq.—"I was for several years under medical treatment and no advantage. I have long since made up my mind to use no medicines; but use such alleviating agents as experience has shown to be beneficial.

"As soon as I am attacked I put on flannel waistcoat and drawers. I find riding in the railway train very injurious; am better near the sea than

den changes of temperature to which the skin is peculiarly sensitive, and with which the nervous system at this time has a close sympathy. Rubbing with a flesh brush is also of service. The application of sweet oil to the whole surface, after it has been thoroughly washed in a solution of soda or pearlash, or other alkaline carbonate, is reported to have been useful. This also protects the skin from change of temperature. 'Camphor on the pillow is said to relieve.

Galvanism has been recommended. The only published case I have seen is that of Dr. Hutchinson of Providence, R. I.¹ The subject of the treatment was a lady who had been a sufferer from Autumnal Catarrh for twenty years. Galvanism was first used September 5th, and in three weeks (the middle of the last week in September) "the patient was well, the only sequela being a slight pharyngitis." But as the last week in September is the usual time of the disappearance of the disease the time when frosts generally occur in New England, no very decided inference can be drawn as to this treatment.

A compress wrung from cold water, applied to the whole front of the chest and covered with a dry flannel, has given relief.²

Of medicines as preventives, many have been recommended. Among these are quinine, iron, arsenic, strychnine, and nux vomica, iodide of potassium, bromide of potassium, hydrocyanic acid, and wild cherry bark infusion. Nearly all of these have an influence upon the nerv-

in the country. I sometimes get relief by holding my face over boiling water — taking a cup of hot tea or coffee — sitting in a warm room. One year I was quite comfortable from washing the body in warm water in which pearlash had been dissolved, and then covering the body with sweet oil. The last year it did not do so well. The difficult breathing in the night is relieved by whiskey and a bottle of boiling water to my feet. I have sometimes found relief from a warm bath. A generous diet, and whatever keeps up the system, is apparently beneficial."

¹ *Boston Medical and Surgical Journal*, November 5, 1874, vol. xci. p. 442.

² J. N. Whiting, Esq., case 53, September 4, 1872.

ous system. It is very difficult to determine the value of any of these substances; the number of cases in which each has been tried is too small to draw any definite conclusion. This much, however, may be said, that few persons are so well satisfied with the results of any one treatment as to repeat it from year to year.

Quinine must be excepted from this statement. It appears to have been more successful than the other remedies; it has been tried by several persons for successive years, with similar good results. It is known to be a specific in intermittent fever, and by analogy may be supposed to do good in this regularly returning affection. It is a good tonic, and increases the desire for food, and the ability to digest and appropriate it. Its use should be commenced at least a fortnight before the critical period, in doses of two grains with each meal, and continued through the disease. It has also been used in large doses, producing ringing of the ears, and the usual temporary deafness in one case, but without advantage. Arsenic, in the form of Fowler's solution, has also evidence in its favor. It should be taken with care, and under medical advice; the dose need not exceed three or four drops with meals.

The bowels should be moved daily. Gentle laxatives, like Congress water, Rochelle powders, citrate of magnesia, or a rhubarb pill, are useful. Violent purging should be avoided.

If the secretions of the kidneys are deficient in quantity, or dark colored, the occasional use of bitartrate of potash (cream of tartar), as a drink, is advisable.

§ 54. *Palliative Measures.* By one or another many remedies are praised as sure cures for the various symptoms. This, like other diseases, has many alleged specifics. Indeed, they are in such number that, as Rousseau said, it is sheer malice in people to be sick while the means of cure are so numerous and certain. The natu-

ral remissions of the disease are such that even the wary and experienced are often deceived into the hope, not destined to be realized, that it is really taking its leave; while the sanguine are happy in the belief that the last new remedy has achieved a victory. Still, a certain degree of relief is obtained by remedies.

§ 55. Local applications are useful. Protecting the eyes from strong light by colored spectacles or goggles, or sitting in a dark room, gives considerable relief; bathing them with cold water, or ice-water, or covering them with cold, wet cloths, relieves the burning. Others, again, find relief in tepid bathing of the face and eyes. When a paroxysm of itching in the eyes comes on, refrain from rubbing them; it produces a different irritation, a certain degree of inflammation, which disappears more slowly than that of the disease. If the eyelids are inflamed, the edges should be slightly smeared with "cold cream," or other mild ointment. Some relief to the irritated conjunctiva is obtained from washing the eyes in an infusion of camomile tea, or by the use of a mild sedative solution of biborate of soda (borax), five or six grains to an ounce of camphor water, a popular remedy with oculists.

The discharge from the nostrils may be relieved by the "head bath;" holding the head over a bowl of very hot milk and water, or hot water alone, while the head and shoulders are covered with a thick shawl; it produces a copious perspiration. The "Turkish Bath" has given relief. Blowing the nose should be avoided as much as possible; it increases the obstruction and discomfort. Let the limpid fluid be wiped away with a soft handkerchief; it will then sooner cease. In railway traveling, considerable protection is given by small pieces of sponge dipped in water and placed just within the nostrils; they exclude dust and smoke, and interfere but little with breathing. A veil of Swiss muslin, wet with water, is a still more complete protection to the whole face.

The nostrils are often completely obstructed early in the morning ; active exercise, running up-stairs, or energetic movements of the body and limbs, of any kind, which sends the blood to the extremities, will give immediate temporary relief, and enable one who can hardly swallow to eat a breakfast with comfort. Hot whiskey and water, before leaving the bed in the morning, is said to prevent attacks of sneezing and closed nostrils. Various irritants have been recommended for the relief of the nostrils ; camphor and sugar, or cayenne pepper, finely powdered, and used as snuff ; or water of ammonia, held under the nose, and the vapor inhaled.

Although we are not satisfied that the solution of quinine of the strength and used in the manner recommended by Helmholtz, has given much relief, but, on the other hand, has often produced much irritation ; and although we are not satisfied that the disease is dependent upon vibrios in the nostrils, we are satisfied that these very troublesome symptoms may be often greatly relieved by the local application of a saturated watery solution of quinine made without the addition of any acid. The best mode of using it is with an atomizer, or, what is quite as good, the perfume distributor in common use ; the spray from the clear solution being thrown into the eyes and throat, drawn into the lungs as freely as possible, and also thrown over the skin of the face. It should be used many times daily.

Few experiments have been made with inhaled gases. In one instance a lady inhaled oxygen gas three times daily with relief. In another case inhalation of the gases from the Geyser spring at Saratoga for ten or fifteen minutes, was followed by great relief of the obstruction of the nostrils. The relief continued for an hour after leaving the spring house.

At night the body should be warmly covered ; perspiration is desirable. The windows should be closed, and

all drafts avoided. If the patient can take opium without inconvenience, five or ten grains of Dover's powder, or the equivalent in laudanum or morphine, at bed-time, will render the night much more comfortable. In the daytime, an hour in bed, warmly covered, will give great relief to severe paroxysms.

Gargling the throat with a solution of a teaspoonful of chlorate of potassa in a pint of cold water, and the chewing of cubeb peppers, relieves the itching.

For the relief of spasmodic cough, morphine in doses of one sixth of a grain, fluid extract of hyoscyamus, and tincture of Indian hemp, are used.¹ Bromide of potassium and hydrate of chloral relieve the accompanying nervous symptoms. The various soothing household remedies — flax-seed tea, gum arabic solution, or bits of the gum dissolved in the mouth, and swallowed for temporary relief, are not to be rejected.

§ 56. *Asthma*. Like all nervous affections, this also yields to a great variety of means, sometimes the most opposite. Most persons require fresh air in large quantity, others seek a hot room, hot foot-baths, and copious perspiration. Experience alone teaches what will relieve, hence the various trials and observations of patients lead to a course sometimes more successful than that prescribed by physicians.

Of all the remedies, the smoking of stramonium leaves has been most successful. They may be dried and smoked in a pipe, or broken up and made into cigarettes, or burned in the room. But they do not relieve all. A secret remedy, much used, is composed of powdered stramonium leaves and saltpetre in the proportion of three parts of the first to one of the last; the powder is placed

¹ Mrs. J. A. F. — "I took bromide of potassium throughout the attack of 1871, but without benefit; one fifteenth of a grain of sulphate of morphine, once in two hours, gave relief to the asthma without affecting my head."

in small conical heaps, burned, and the smoke inhaled. The EsPIC cigarettes are often used ; each cigarette contains the following substances : —

R \bar{y} Belladonna leaves	4 $\frac{1}{2}$ grains.
Hyoscyamus leaves	2 $\frac{1}{2}$ grains.
Stramonium leaves	2 $\frac{1}{2}$ grains.
Phellandrium aquaticum leaves	$\frac{3}{4}$ grain.
Opium	$\frac{1}{8}$ grain.

Mix. These are powdered, carefully mixed, and rolled up in paper. Only two cigarettes should be smoked during a single attack ; used to excess they cease to give relief.

Saltpetre paper is a popular remedy. The paper is dipped in a half-saturated solution of saltpetre, dried, and rolled into cigarettes, and smoked or burned in the room.

The inhalation of the vapor of water of ammonia through the mouth, with the nostrils closed, frequently succeeds. A teaspoonful should be poured into a bowl, and the face held a foot or two above it ; the inhalation to be continued a quarter of an hour.

A quarter of a teaspoonful of spirits of camphor allowed to trickle down the throat, sometimes relieves.

Arsenical cigarettes, to be found at the apothecaries, are frequently smoked with relief. They should be used with care, a few puffs at a time.

The inhalation of sulphuric ether and chloroform give relief to some ; in such cases the relief is usually immediate ; it should not be pushed to insensibility. The inhalation of carbolic acid has been useful.¹

The treatment may be summed up as follows : —

1. *Remain in a non-catarrhal region during the critical period.*

¹ Mr. N. M. H. is at once relieved of asthma, however severe, during the critical period, in the scouring room of a woolen mill. The substances used in the process are manure from the hog yard and urine.

2. Strengthen the system by food and tonics.
3. Avoid dust, smoke, night air, and the vicinity of plants known to produce a paroxysm.
4. Dress warmly, with flannels next the skin.
5. For the cough, mild narcotics ; various household demulcents.
6. For asthma : smoking stramonium leaves, saltpetre, Espic cigarettes, arsenical cigarettes, inhalation of sulphuric ether, carbolic acid.

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TABULAR VIEW OF CASES

The figures under the head of Symptoms indicate the degree of severity.

MALES

Number.	Name.	Age.	Age when First Attacked.	Profession or Occupation.	ANNUAL ATTACK.		Head Symptoms.	Chest Symptoms.		Remarks.
					Beginning.	End.		Cough.	Asthma.	
1	H. W. H.	30	15	Lawyer.....	August 20.....	October 1.....	3	2	0	Father attacked.
2	H. W. B.	58	36	Clergyman....	About August 17..	About October 1....	3	3	3	A sister attacked.
3	J. J. D.	60	45	President of Bank.	August 11-15.	October 1.....	2	2	0	Recently pale.
4	T. H. F.	27	4	Merchant.....	August 23, 24.....	October 1.....	3	2	3	Maternal asthma.
5	G. L.	15	8 or 4	Student.....	August.....	Cold weather.....	3	1	1	.....
6	L.	16	4	Student.....	September 1.....	October.....	1	-	3	First attack.
7	J. C. H.	57	27	Physician.....	Last week in Aug.	October 1.....	3	-	1	Died of apoplexy.
8	D. W.	70	50	Statesman....	August 23.....	Last week in Sept. or first week in Oct.	3	2	1	Died of disease.
9	R. F. F.	35	12	Merchant....	August 20.....	September 25.....	3	3	3	Died at forty.
10	M. W.	56	21	Physician....	August 23, 24.....	October 1.....	3	3	0	Father, twice, one daughter.
11	E. F. A.	15	10	Student.....	August 20.....	September 25-30....	3	2	0	June cold; not eat for 2 weeks.
12	W. P. A.	51	13	Manufacturer.	August 15.....	First frost.....	2	2	0	A brother has it.
13	N. M. H.	42	23	Manufacturer.	August 20.....	October 1.....	2	2	0	Cousin has it.
14	M. W. Jr.	15	11	Student.....	August 24.....	October 1.....	3	2	0	Attacks very severe.
15	E. W.	49	25	Merchant.....	August 15-24.....	Third week in Sept..	3	1	1	Case not seen.
16	A. E. N.	36	24	Manufacturer.	Last week in Aug.	First or second week in October.	1	3	1	Severe case.. flesh and bone wasted.
17	J. K. F.	49	46	Gardener.....	Third week in Aug.	Cold weather.....	3	3	0	Is able to work.
18	G. C. W.	43	6 or 7	Farmer.....	August 20-23.....	First hard frost....	3	1	2	Mother has it one year.
19	C. P. H.	36	10	Carpenter....	August 15.....	Frosty nights.....	3	2	2	September 1.
20	W. H. Y. H.	66	31	Lawyer.....	August 16-25.....	First black frost....	3	3	2	Has four attacks.
21	W. P. J.	55	20	Merchant.....	Aug. 20-Sept. 5...	In four weeks.....	3	0	0	Nasal catarrh.
22	S. B.	92	24	Manufacturer.	August 24-31.....	Frosty weather.....	3	3	1	.....
23	E. S. D.	63	46	Teacher.....	August 15-20.....	September 25.....	3	3	0	.....
24	J. H.	63	31	Manufacturer.	August 20.....	First frost.....	3	3	3	Very severe.
25	H. A. R.	50	30	Merchant.....	August 20.....	September 25.....	3	3	2	less severe. Nasal catarrh.
26	J. P.	48	45	Merchant.....	August 23.....	September 20-30....	3	2	3	.....
27	F. P.	25	8 or 10	Farmer.....	August 19.....	October 1.....	3	3	3	Increased severity.
28	L. S.	30	From youth.	Jurist.....	August 18.....	First or second week in October.	3	2	3	Attack held. Died of pleurisy. have asthma.
29	T. J. L.	50	Many years.	Butcher.....	August 24-30.....	October 1.....	3	2	1	.....
30	C. W. W.	26	22	Farmer.....	August 15-20.....	October 1.....	2	1	2	.....
31	W. R.	60	42	Paper Maker..	August 20.....	Hard frost.....	3	1	3	One year relieved.
32	J. S.	38	31	Bank Officer..	August 15-24.....	October 1.....	3	3	3	A very severe case.
33	T	26	21	Clergyman....	August 24-31.....	Frosty nights.....	3	2	2

OF AUTUMNAL CATARRH.

of severity. 1, mild; 2, moderate; 3, severe; 0, wanting.

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OBSERVATIONS.

INFLUENCE OF RESIDENCE OR LOCALITY.

die, and died of phthisis.....	Entirely relieved in Switzerland, London, England, and White Mts.; 1871, relief at Twin Mountain House; no relief at sea-side.
brother's son have Autumnal Catarrh.....	Two years in Europe, no catarrh; 1863, in Tyrol, symptoms one hour.
aged bronchitis. A brother has Autumnal Catarrh..	Entire relief at Gorham, Jefferson Hill, Glen House; somewhat relieved at Profile House, and Mt. Mansfield in Green Mountains; no relief at North Conway.
has catarrh in autumn.....	Entire relief in England and Highlands of Scotland; at sea; at Glen House, Profile House; at Crawford's; aggravated at Cape May.
.....	No relief at sea-side nor Conway N. H.; relieved at Gorham; entire relief at Success.
very severe. Gradually disappeared after several years.	.....
at the age of sixty-nine.....	.....
of brain and cirrhosis of liver.....	Entire relief in Scotland in 1839; in White Mountains from August 17, 1861, till August 26, and in Franklin, till September 8. Attacked next day immediately on arrival in Boston.
hour of cardiac disease.....	Entire relief for nine years in St. Paul, Minn.; during this period was one year, in September, in Cambridge, Mass., and had catarrh.
others, one sister, one son, have Autumnal Catarrh; has June Catarrh.	Entire relief at Gorham and Glen House, and England. No relief at Profile House, Crawford's, Mt. Monadnock, N. H., nor sea-coast.
was irritated in hay-field and by hay in the barn; can't it in September except where he is free from catarrh.	Some relief at Cape Cod; usually entire relief at White Mountains; relief after crossing the Mississippi on the way to San Francisco.
few York suffers severely from Autumnal Catarrh.....	In White Mountains eight years, with entire relief; in 1860 was in England, in autumn, with entire relief.
Autumnal Catarrh. (No. 24.).....	Suffers most at sea-coast; complete relief at Jefferson Hill, Glen House, and Gorham; slight relief at North Conway.
severe from the first.....	Suffered severely at Mt. Monadnock and Crawford House; complete relief three last years at Glen House, Gorham, and England.
is generally.....	1867, August 17, catarrh ceased at Littleton on way to Dublin, N. H.; returned with severity at the same place on the way home.
keeps bed; has night sweats and is much reduced in length.	Entire relief at Gorham; worse at Isles of Shoals.
and to his occupation through attack.....	.....
Autumnal Catarrh eight to ten years, now eighty-four; sister has June Catarrh.	Complete relief during the two weeks he was in Gorham, in 1866.
5, had pneumonia.....	No relief at sea-shore.
children; one daughter has Autumnal Catarrh, which within a few hours of her father's attack.	.....
severe.....	Complete relief at Catskill Mountains and western New York.
.....	While residing in New Ipswich, N. H., relieved by going to Boston; resided at Saco, Me., on sea-coast, fifteen years; attacks regular but less severe.
.....	Complete relief at Gorham, Glen House, Crawford's, and Peterboro', Madison Co., N. Y.; no relief at Sharon Springs, or Isles of Shoals.
see; kept bed in a dark room in former years, of late Cousin has Autumnal Catarrh. (No. 18.)	Relief in Highlands of Georgia, and north side of White Mountains; no relief at Franconia.
of late years continues longer in a modified degree...	Eight successive years at White Mountains, Gorham, Glen House, and vicinity; always relief—generally complete.
.....	Relief at Glen House; Island of Mackinaw.
on of heart during attack.....	Suffered most severely while transportation agent on a railway.
to commence the same day and same hour each year. In 1861, with cardiac symptoms and effusion into pericardium, and brain. Mother, son, and granddaughter had Catarrh.	Returning from Europe, landed in Boston October 1, well; in two days had catarrh.
.....	No catarrh while in Muscatine, Iowa, for several successive years; returning to Somerville, Mass., it reappeared in less severe form.
.....	1867, at Gorham, all symptoms relieved.
it began September 5. Niece has Autumnal Catarrh Gorham and Quebec.	Entire relief at Quebec and Gorham.
.....	1867, August 17, arrived at Gorham; complete relief same day.
.....	1867, September 4, at Gorham, relief immediate, and in two or three days complete; no relief at Fire Island or Catskill Mountains.

Number.	Name.	Age.	Age when First Attacked.	Profession or Occupation.	ANNUAL ATTACK.		Head Symptoms.	Chest Symptoms.		
					Beginning.	End.		Cough.	Asthma.	
34	L. E.	23	19	Merchant.....	August 18.....	Frosty nights.....	3	3	0	Had June C Lucerne in
35	C. H.	65	Early youth.	.....	August 21.....	October 1.....	3	2	0	.....
36	H. G. F.	28	8	Merchant.....	August 19-21....	First hard frost....	3	0	0	Itching of ey
37	F. B. F.	45	20	.....	August 20.....	October 1.....	3	2	1	.....
38	G. T.	46	13	Brick Maker..	August 20-24....	October 1.....	3	3	2	Ceases with from Catarrh
39	W. A. P.	21	5	Student.....	August 10.....	Last week in Sept. ..	3	2	-	Exposure to
40	E. C. F.	34	Infancy.	Merchant.....	August 20-27....	September 10-20....	3	0	0	Not a severe
41	J. W. D.	40	19	Merchant.....	August 20.....	October 1.....	3	2	3	Two or three since appea
42	E. P.	49	22	Physician....	August 20.....	First frost.....	3	2	3	A very severe
43	G. H. H.	35	24	Teacher.....	August 23.....	First frost.....	3	3	3	Catarrh ceas in St. Loui
44	J. T. H.	-	-	Engineer.....	August 27.....	In six or eight weeks	-	-	-	.....
45	C. W.	25	14	Student.....	About August 15..	Six weeks.....	3	2	0	Catarrh relie
46	F. H.	-	23	Manufacturer.	August 11-15....	First week in Oct....	2	1	0	Great unco
47	J. A. W.	33	4	Bookbinder...	August 20.....	October 1.....	3	3	2	.....
48	B. S. H.	44	14	Clergyman...	August 20.....	Six weeks.....	3	0	1	.....
49	J. B. F. T.	34	7 or 8	Merchant.....	August 15.....	Two months.....	3	2	-	.....
50	J. W.	57	52	Prof. of Anat.	Last week in Aug..	October 1.....	3	2	0	.....
51	E. F.	49	25	Clergyman...	August 15.....	First frost.....	3	3	3	Both parents
52	T. H. M.	46	41	Manufacturer.	August 21.....	September 25.....	2	1	1	.....
53	J. N. W.	53	35	Lawyer.....	August 22.....	September 21.....	3	3	3	Represents h
54	M. H.	52	45	Banker.....	August 20, 21....	Four weeks.....	3	2	3	.....
55	A. C. D.	42	7	Merchant.....	August 20.....	September 25.....	3	1	0	.....
56	J. H. W.	36	14	Lawyer.....	August 12.....	.....	1	1	3	Father and g
56	A. W.	34	28	Physician....	August 23.....	October 10.....	3	2	3	June Cold fr Catarrh an
57	W. B. L.	42	25	.....	August 10-15....	Latter part of Sept..	3	1	0	.....
58	W. D. W.	38	10	.....	August 20.....	First heavy frost....	3	3	3	.....
59	V. L. B.	68	36	Lawyer.....	August 19, 20....	With hard frosts....	3	3	2	.....
60	G. B. A.	46	28	.....	August 15.....	.....	3	2	3	Had dysente
61	A. F. H.	62	Early youth.	Cotton Manuf.	August 15....	October 1, or frost...	3	2	3	Asthma bega
62	J. R.	-	-	Officer U. S. A.	August 19, 20....	October 6.....	3	-	3	Has had Aut
63	W. M.	62	39	Merchant.....	August 15-20....	.....	3	2	3	.....
64	M. C.	73	Early youth.	.....	August 15.....	Last week in Sept. ..	3	3	0	.....
65	B. W. A.	51	40	Manufacturer.	August 19.....	.....	3	2	3	.....
66	H. V.	65	45	.....	August 18.....	October 1.....	3	3	2	.....
67	G. S.	31	25	Banker.....	August 20.....	October 1, first frost.	-	-	-	.....
68	P. A. J.	31	Infancy.	Clergyman....	August 15.....	Middle of Sept.	3	2	2	.....
69	E. P. W.	47	33	Clergyman...	.....	Last week in Sept...	2	2	3	Asthma exce
70	D. S. D.	35	28	Banker.....	August 14-22....	White frost.....	2	2	2	.....
71	J. H. W.	36	Infancy.	Clergyman....	Middle of August.	.....	2	2	3	Catarrh com eleven yea

OBSERVATIONS.	INFLUENCE OF RESIDENCE OR LOCALITY.
held from early youth until 1868. Was one year in June. No catarrh.	1867, complete relief at Summit House and Glen.
.....	Escaped catarrh in England; relieved at Long Branch.
..... begins August 1	Relief at Eastport and Houlton, Me.
.....	In 1868 was in England, Ireland, and Scotland, in Aug. and Sept., complete relief; no relief in Maryland and Virginia in 1868, 1864.
..... first hard frost. Resides on Hudson River ten miles from Mountain House.	Complete relief at Gorham, in 1868; no relief at Catskill Mountain House nor at sea-side.
..... hay in barn produces sneezing.....	Complete relief in England, near Manchester, in 1858, and in Scotland, near Balmoral, in 1859; relief in Halifax, N. S., and at White Mountains, in 1868.
.....	Has always resided in Boston and vicinity.
..... years had catarrh while roses were in bloom; none since of Autumnal Catarrh.	Complete relief at White Mountains and Canada; no relief at sea-side.
..... case with much asthma.....	1867-1870, relief at northwest side of White Mts.; no relief at sea-side.
..... in St. Louis later than in Marietta, Ohio; frost later than Marietta.	In 1862 escaped catarrh in Salem, Mass.; this the only year; no relief at St. Louis.
.....	Complete relief in Nova Scotia and three years while in Montana, U. S., and Colorado; no relief at Frostburg, Md., 1,050 feet above tide.
..... while suffering from diarrhoea.....	Relieved two years at Port Royal and at White Mountains; less severe at sea-side.
..... had Autumnal Catarrh forty years, beginning at thirty.	Relief at White Mountains; no relief at sea-side.
.....	Relieved at Lakes Umbagog, Memphremagog in Maine, and at Littleton and Whitefield.
.....	Relieved at Catskill Mountains and in Scotland in 1866.
.....	Complete relief at Adirondack Mountains; some relief at sea-side; no relief at Profile House in 1868.
.....	Relief at Glen; none at Mt. Desert, but relieved while on an island two miles distant.
..... had catarrh; mother more severely, but neither periodically.	Relieved at Gorham, also in North Germany and in central England.
.....	Escaped in England and Europe one year; relieved at Gorham, 1871.
..... case as very severe in all its symptoms.....	Was well in Switzerland and Italy in 1869; some relief at Fire Island, much greater relief at Glen House in 1871.
.....	Well in France and Switzerland, 1867-1869; well at Glen House.
..... grandmother asthmatic; asthma prolonged some months in eighteen years to twenty-eight years, then Autumnal disappearance of June Cold.....	Was relieved at Bethlehem, near White Mountains.
.....	Escaped at Marquette; was free when in camp hunting.
.....	Lives in Chicago, Ill.
.....	Lives in Saline County, Mo.; was attacked at Colorado Springs, Col., earlier than at home.
.....	Attacked at Colorado Springs; well in New Brunswick, Canada, Richardson Lakes, in Maine, and Jefferson, N. H.
.....	Relieved at sea in forty-eight hours.
..... August 15; attack of catarrh delayed until Sept. 1.	Suffered severely in Pennsylvania and Maryland; much relieved in Chicago and the lake cities generally.
..... at fifty.....	Relieved at Waumbee House; no relief at Block Island.
..... annual Catarrh twenty-five years.....	Well at Bethlehem and Lancaster, White Mountains.
.....	Relieved at the Glen House.
.....	Had evidence of the Catarrh in England, Scotland, and Ireland.
.....	Some relief at Fire Island and Isles of Shoals; complete relief at St. John, N. B., also at Montreal, Quebec, and Saguenay River.
.....	Some relief at sea-side with wind from ocean; relieved at Glen House, and at Cresson on Pennsylvania Central Railroad.
.....	Born in Germany, lived in Muscatine, Iowa, twenty years; was relieved at Glen House.
.....	Free in Switzerland.
..... singly severe	Born in England; first attack in Illinois; relieved at Oakland, in the Alleghany Mountains; well in England and France.
.....	Has lived since first attack in Laconia, N. H.
..... none in family. June Cold from infancy; for past Autumnal Catarrh with slight June Cold.	Free from disease in Paris one year, and at sea one year.

TABULAR VIEW OF CASES

The figures under the head of Symptoms indicate the degree of

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Number.	Name.	Age when First Attacked.	Number of Annual Attacks.	ANNUAL ATTACK.		Head Symptoms.	Chest Symptoms.		
				Beginning.	End.		Cough.	Asthma.	
56	Mrs. H.	44	25	August 24	October 1	2	3	2	Chronic bronchitis for ten or more years; the cough continuing into winter. Daughter had Rose Cold in early childhood.
57	Mrs. A. H.	23	24	Third week in Aug..	First frost	3	2	2	Chronic affection of nasal mucous membrane with commencement of Autumnal Catarrh in early childhood.
58	Mrs. J. B.	32	14	August 17	October 1	3	2	0	June Cold from sixteen to thirty years; Autumnal Catarrh; a sister died of pneumonia while in England or on voyage.
59	Mrs. S. B.	-	-	August 20	October 1	3	3	0	.....
60	Mrs. G. D.	20	8	August 15-18	October 1	3	3	3	Had June Cold before Autumnal Catarrh; peaches.
61	Mrs. S. B. B.	43	25	August 23	October 1	2	1	3	Gradual diminution in severity of symptoms.
62	Mrs. J. H. D.	21	9	August 15-20	First week in Oct....	2	3	3	Had Catarrh in June three years ago; residence in England, and has never returned.
63	Miss A.	26	12	August 15-24	October 1	3	1	3	Had pneumonia in September, 1881.
64	Mrs. B.	46	4	About August 23....	First frost	3	2	0	.....
65	Mrs. M. J. M.	16	22	August 17-24	October 1	3	3	0	June Catarrh till five years ago.
66	C. C.	27	8	August 15-20	First frost	3	3	3	Autumnal Catarrh arrested in early childhood, lasting three days; on return from abroad.
67	Mrs. D.	33	10	August 20	October 1	3	2	0	.....
68	Mrs. C.	-	20	August 17	First frost	1	-	-	.....
69	Miss E. W.	39	7	August 25-31 .....	.....	1	2	0	Case generally mild
70	Miss H. W.	25	11	August 20	October 1	3	3	0	.....
71	Mrs. W. B.	27	25	August 20	October 10	3	3	3	Mother died at seventy-nine; attacked with severity gradually.
72	Miss A.	24	11	August 19	September 27	3	1	3	.....
73	Mrs. F. A. B.	22	24	Fourth week in Aug.	First frost	3	2	2	.....
74	Miss A. C. B.	24	8	August 20	Fourth week in Sept.	3	0	0	.....
75	Mrs. S. B.	12	33	August 20	First frost	3	3	3	.....
76	Mrs. S. D. P.	13	25	August 23	First frost	3	3	3	Mother had Autumnal Catarrh in early childhood.
77	Mrs. B.	30	23	August 20	Last days of Sept., first days of Oct.	3	3	3	.....
78	Miss S. W.	-	5	August 16-20	November 1	3	3	-	Cannot eat peaches or tomatoes; Mountains.
79	Miss B.	32	5	August 19, 20	September 25	3	1	0	.....
80	Mrs. F.	21	6	August 11, 12	October 1	3	2	0	The affection of the eyes very severe.
81	Mrs. G.	40	10	August 17, 18	September 25	1	3	1	Father, two brothers, and one sister, all died of asthma at critical period.
82	Mrs. C.	41	23	August 23	October 1	3	2	3	.....
83	Miss G.	25	Child.	August 20	October 1	3	3	2	.....
84	Miss M. P.	9	3	August 18-20	First or second week in October.	3	3	0	.....

OF AUTUMNAL CATARRH.

f severity. 1, mild; 2, moderate; 3, severe; 0, wanting.

LES.

Observations.	Influence of Residence or Locality.
m years, gradually increasing in severity, inter; died suddenly December 31, 1866. Life, afterward Autumnal Catarrh.	Relieved entirely at White Mountains; relieved in Boston.
membrane; June Cold ten years; ceased Autumnal Catarrh.	Complete relief at Gorham, and in 1869 at Carrol, N. H.; some relief at sea-side.
two; nearly ceased at commencement of June Cold. No June Cold during four Continent.	Complete relief at White Mountains and Bethel, and during three years at sea.
.....	Relieved at Gorham; attacks less severe since.
catarrh; attacks produced by flowers and	Complete relief at White Mountain Notch; partial relief at Profile House; in 1863 no relief at Jefferson Hill; no relief at sea-side.
symptoms.....	Less severe in Boston than in the country.
succession; ceased during two years' residence since return home.	Complete relief at Glen House; partial relief at Profile House; complete relief during passage from Liverpool to New York; no relief at Catskill Mountains.
.....	Complete relief at Gorham, in 1866; health improved during the following year.
.....	Complete relief at Gorham, in 1866 and 1867; some relief at sea-coast.
.....	1866 and 1867 at Gorham with complete relief.
.....
.....	Much relieved in Lake Superior region.
.....
.....	Entirely relieved in Dublin, N. H., Gorham, and Glen.
.....	Worse in the country than in Cambridge; complete relief in Gorham.
Autumnal Catarrh most of life; dimin-	Complete relief for eleven years at Profile House, Crawford's, and Glen House.
.....	Relief at Gorham; no relief at sea-coast.
.....	Relieved in the Glen; no relief at sea-coast; relieved in New York.
.....	Landed in New York from Liverpool, September 16; catarrh commenced same day; catarrh at St. Louis, Missouri, five years in succession.
.....	Relief at Glen House, 1864 and 1866; no relief at Crawford's or Profile, nor at Crescent, in the Alleghanies of Virginia.
Sixty-four years of age.....	Complete relief at Waumbec House two years; one year escaped at Beverly Farms, Mass.
.....	No catarrh at sea or in Manilla; some catarrh sensations in Macao; decided relief at Gorham.
home; can eat them freely at the White	Relieved at Glen House, at Gorham, and the Waumbec; has visited mountains three years.
.....	Much relieved at Glen House, and at Murray Bay, on the St. Lawrence, below Quebec.
.....	Somewhat relieved at Long Branch; three years in Europe quite well; quite well at the Glen House.
died of consumption; one brother has	Well at Glen House.
.....	Free from disease in Europe during four seasons; well at Twin Mountain House.
.....	Slight attack in Antwerp, ceased immediately on arriving in Paris.
.....	Lives in Philadelphia; relieved at Waumbec House; no relief at Cape May or Atlantic City.

ILLUSTRATIVE CASES.

§ 57. THE following cases will give a full and accurate account of the disease as it appears in the different individuals. They contain many facts in a connected manner, which could not be presented in the Tabular View:—

CASE 10.

Author's Case.— My first attack of Autumnal Catarrh was in 1833, the year of my graduation from Harvard University, at the age of twenty-one. My second attack was in the following year, 1834, while acting as assistant engineer in the construction of the eastern portion of the Boston and Albany Railroad. From that time it has returned annually, commencing about the 20th of August, not varying a week from that date, and of late years more regularly about the 24th, and continuing until the last week in September, or until one or two killing frosts.

It begins with an itching in the inner corners of the eyes and in the internal ear and throat. This is soon followed in watering of the eyes, with irritation, and a limpid and profuse discharge from the nose. That from the eyes is excessive, and flows over the lids; both require the almost constant use of a handkerchief. In a day or two paroxysms of sneezing and nose-blowing occur; not an ordinary sneeze; it is more violent, and many follow in quick succession. The nostrils are obstructed, one or both at times completely closed. Generally this obstruction is of short duration, coming on suddenly and as suddenly going off; at other times, as in the morning before breakfast, it is often prolonged, and materially interferes with swallowing. But what is very singular, however completely the nostrils are shut up, they are at once opened for the time by any exercise which gives warmth to the extremities, running, or active movements of any kind. The attacks of itching in the eyes are frequent and very annoying; the vessels of the conjunctiva are enlarged, and if irritated by rubbing (and the tendency to rub them is almost irresistible), the surface becomes of a nearly uniform red. This redness soon disappears. The affections of the eyes, nose, and throat come on in fits, and are most severe morning and evening.

They are aggravated by dust and smoke, especially when combined, as in railway traveling, and by the evening air. The eyes are sensitive to light; the lids are inflamed and tender; the edges have not unfrequently small pustules, which are quite painful; and continue several days. I am better in rainy weather than in fair weather, partly because of the absence of dust, but also, I think, the absence of other noxious influences.

The itching of the internal ear is often very annoying, causing attempts at relief by rubbing the external surface with the point of my finger. The throat also suffers in the same way, and the tongue is pressed and rubbed against the roof of the mouth for relief. These attempts, however, avail but little.

The skin itches, especially on the back between the shoulders, and on the scalp. It is sensitive to slight irritation; the cuticle is easily removed, and does not readily re-form; and not unfrequently eruptions appear, principally in the armpits, which also heal slowly.

The difficulty of breathing through the nostrils, and the sudden chokings from dryness of the throat, make the nights restless, and cause dreams of impending suffocation. To these is added a peculiar nervous condition difficult to describe, which compels to frequent change of position, or even quitting the bed for relief.

This state of things continues a week or ten days, with varying and deceptive severity, every little while diminishing and raising a hope that the disease is disappearing, and then returning in full force. A cough now comes on, frequent, irritative, and without expectoration. After a time it becomes paroxysmal, most severe in the night, compelling me to sit up in bed, and frequently causing retching and attempts to vomit. Even after many minutes of severe coughing, the only expectoration is a little transparent mucus, which brings but slight relief. These attacks make the muscles of the chest sore, and exhaust both by their violence and by the loss of sleep.

I have some wheezing in the breathing at night after these severe attacks of coughing, but never decided asthma.

During this stage of the disease, the system suffers, the appetite is lessened, and both flesh and strength are diminished. The vigor and inclination to effort, mental or physical, is also less, with a general sensitiveness to annoying external impressions. The action of the heart becomes excited and intermitting, occasioning much discomfort after exercise.

At the commencement of the third week, the disease begins to diminish. The fits of sneezing are less frequent and shorter during the day, and are soon confined to the early morning; the secretion from the nostrils is thicker, and not so irritating; the eyes are better,

neither so sensitive to the light, nor so tearful; the paroxysms of cough lessen in frequency and severity; the expectoration is increased, is thicker and more satisfactory. By the last week in September, or after a good frost, it entirely disappears.

My first attack was while in Cambridge; afterwards I was in Boston and the immediate vicinity until 1837; since then in Cambridge. In all these places the attacks have been equally severe, unless it be that I gained some relief by passing the day at the rocky peninsula of Nahant, where I escaped heat and dust. In 1865 I spent my usual period of suffering in the White Mountain region, principally at Gorham and in the Glen. While in these parts I was free from the disease. I have also tried various other places, the Profile House, Littleton, Lancaster, Crawford House, but in none of them have I been so free as in the Glen. At Grand Monadnock I got no relief. Three seasons have been passed under canvas on the banks of the Peabody, with complete relief. One year, 1869, I was in the Highlands of Scotland, also quite well.

So long as I remained at home, the disease did not, I think, diminish in severity; on the other hand, with later years, I have been weaker, and my strength is regained more slowly; neither have my visits to the mountains for four successive years lessened the tendency to it. Several years I did not seek the White Mountains until the signs of disease were obvious; and in 1872 I was detained until the second of September, when the severity was as in former years. The functional disturbance of the heart, after my visit to the mountains, ceased.

1876. — Since 1865 I have had a slight catarrhal affection in June. It was so slight that it hardly attracted my attention, but having noted everything of the kind that occurred to me, I observed that it recurred annually. I do not perceive that it has increased in severity, and is simply irritation of the eyes and an occasional sneezing when exposed to dust; it has never produced cough or any affection in breathing. During the past three years I have been able to bear my autumnal attack with greater ease; indeed for two years I have not interrupted my professional work during the month of September.

Medical treatment has availed little even in diminishing its severity. This is probably because I cannot take opium or morphine, even in small quantity. I have been benefited by warm flannels next the skin during the critical period, and a generous diet of meat and vegetables. Wine and other stimulants have done me no good. I avoid all irritants, dust, and smoke, during the day, and the evening air. The windows of my sleeping-room are closed early in the forenoon, and kept closed through the night. I avoid blowing my

nose as much as possible, as it almost inevitably produces complete obstruction of the nostrils.

During the last two years I have used the quinine spray upon my face, eyes, nose, and throat, and have found great relief from it. I cannot say whether the autumnal disease is diminishing in consequence of the treatment or in consequence of the June affection.

My father suffered from a similar and probably the same disease. Of his four sons and a daughter, all who arrived at maturity, three sons and the daughter are affected; my own son is a sufferer, my daughter has June Cold, and her son has Autumnal Catarrh.

CASE 8.

Hon. Daniel Webster. — The private correspondence of this eminent statesman shows clearly that he was a subject of Autumnal Catarrh.

The first attack was in 1832, when about fifty years old, and while living in Boston. It commenced annually about the 23d of August, and ended about the 1st of October. August 15, 1849, he writes, "In seven days I shall begin to sneeze and blow my nose; and the first week the catarrh is usually most severe." The eyes were first attacked. September 12, 1850: "I use the confidential hand of another to write you a short letter, my eyes holding out to perform a small part of the duty expected of them every day. I am in the midst of my periodical catarrh, or 'Hay Fever,' or whatever you please to call it. I read nothing, and hardly write anything but signatures. The disease is depressing and discouraging. I know there is no remedy for it, and that it must have its course. One misfortune is, I cannot take, even in the smallest quantity, the common remedy, opium. It produces loss of appetite and great prostration of strength; but since the event of last week terminated, I have some little time for rest, and shutting myself up very much, I keep as quiet as I can." Again: "My annual cold is now heavy upon me, weakening my body and depressing my spirits. It has yet a fortnight to run; and perhaps will sink me lower than it did when strong excitement enabled me to withstand it. I have lost a good deal of flesh, and you will think me thin and haggard. I have had little sleep, not four hours a night on an average for the whole six months." This was immediately after the passage of the "Fugitive Slave Law."

September 18th: "My head and eyes are not in the best condition. Traveling against a strong wind has brought on my cold badly, and to-day I am not well. The cold, or influenza, with which I am lately visited, is likely, according to former experience, to last some

weeks, and quite disables me from public speaking." 1845, at Marshfield, the attack seems to have been earlier than usual. "Here, August 17th, I have been more or less under the influence of my incurable catarrh. Some days I have felt quite discouraged. Now it seems a little better. The paroxysms are not so frequent, though two days ago I had a very bad forenoon. It came on in a moment, and went off, when it did go, just as quick. Some days I feel quite well, and can keep out without inconvenience, if the weather be fair; on other days I cannot go out at all, fair or foul. Last Thursday was fair weather. I went over to the Gurnet, and caught some fish, and felt well all day. Since then my catarrh has been continually quite severe. I hope it will soon begin to taper off."

October 4, 1851, at Marshfield: "The catarrh, with its sneezing, its nose-blowing, its cough, and its asthma, seems to be taking leave. My eyes are still weak, but my greatest difficulty at present is a general want of strength."

The following year, 1852, also at Marshfield, September 12th: "The catarrh is upon me in its various forms, alternating as usual, but as yet not so severe and heavy as on former occasions. My general health is not so much prostrated. If the weather be wet or damp, I must stay in the house, and have a little fire to prevent fits of sneezing and nose-blowing. When the sun is very bright, I am obliged to avoid going out on account of my eyes, except, indeed, when the sea is calm, and I am protected by an awning. The bracing air of the ocean I feel very beneficial."

November 5th, 1850. While Secretary of State, Mr. Webster, evidently under the influence of his depressing malady, writes to the President: "I am quite aware how inconvenient my long absence is to you and the government, and sometimes I feel that as this illness is of annual occurrence, I ought to regard it as unfitting me for an office the duties of which require constant attention; I must now go to Marshfield for a few days. When there a fortnight ago, I was hardly able to go out of doors, and could do nothing about arranging my little affairs."

September 28th, at Marshfield: "Sometimes the force of the catarrh seems pretty much broken, and then it returns, attacking the head, eyes, nose, etc., with great violence. I think it is approaching its last stage, which is the asthmatic stage. Some of our friends who are subjects of the complaint, and have short necks, dread this. I do not fear much from this, although in this stage I feel its influence more or less on the chest. In such a day as this, a northeast rain-storm pouring, I cough a little, and am as hoarse as a frog." October 4th: "The recent weather, cold for the season, has been useful to me."

The previous year, September 27th: "My catarrh is going off, or else is having a long intermission; and for whichever it may be, I am truly thankful."

September 29th, 1848, at Marshfield: "My catarrh is greatly relieved. If I get through the night without a paroxysm, I mean to set the lark an example of early rising to-morrow, and listen to the 'murmurs of the Atlantic surge' before the sun fairly purples the east."

Some years it lasted longer. 1850, October 14th: "Tuesday, the 8th, I was to have gone into State Street to meet the people, but I did not find myself well enough. The next day, Wednesday, I came down to my house a good deal sick, and have hardly been out of doors from that day to this. My catarrh has held on unaccountably, and for three or four days I was quite ill with it, so much so that I called a physician."

Mr. Webster, during the critical period, was in successive years in Washington, New York, Boston, and at his sea-side residence in Marshfield, near Plymouth, Mass. In all these places he suffered nearly equally. In 1839 he was in Scotland during the month of August and the greater part of September, and was exposed to the rain at Lord Eglintoun's tournament, but escaped entirely.

In 1849, August 30th, he was in Franklin, N. H., about forty miles south of the Mount Washington region. "My cold was severe coming up in the 'cars,' but since Monday evening I have hardly felt it. My eyes are weak, and I am obliged to avoid the sun; but so far I have suffered nothing in comparison with former years."

In 1851, August 6th: "To-morrow I think of going to New Hampshire, hardly so much for a change of air as to look after some private affairs. In general I find that those affected by my complaint avoid the interior and come to the coast. But this is not universal." Franklin, N. H., August 10th: "I came to these regions on the morning of Thursday the 7th, thinking that the mountain air might strengthen me against the times when I expect my enemy, the catarrh, to attack me." August 19th: "Although I date this letter from Franklin, N. H., I write it among the 'White Mountains. I stayed at Franklin until the railway trains, passing and repassing every few hours, began to bring me many daily visitors; and as I wished for quiet and privacy, I took my own conveyance and came off in this direction. I have never had confidence that I should be able to avert entirely the attack of catarrh; but I believe that at least I shall gain so much in general health and strength as to enable me in some measure to resist its influence and mitigate its evils. Four days hence is the time of its customary approach."

August 25th: "As yet I do not sneeze, nor are my eyes affected. It has not stayed away so long before." August 26th: "Things are *in statu quo*. There is no positive symptom or appearance of catarrh. In driving out yesterday afternoon, the wind freshened up, and I sneezed twice, but John Taylor sneezed three times." Franklin, August 27th: "Thus far the catarrh holds off. It was due on the 23d, but as yet does not show itself." September 8th: "I have been able to keep off the catarrh so far."

Mr. Webster evidently escaped his enemy in the White Mountain region, and narrowly missed the discovery that he escaped it by visiting them. Unfortunately for this discovery, he had fallen into the hands of a friend who appears to have been a sufferer from the June Cold, and who advised him to a course of drugs, until, as Mr Webster says; "My system is so full of iron, potash, and arsenic, that my stomach has become deranged. I took a blue pill last night, and a Rochelle powder this morning. I have had rather a hard time. I have been able to keep off the catarrh so far, but it has called upon me to take so much medicine as a good deal to derange my system. By this process I have lost flesh, and am not a little reduced." September 8th he was free from catarrh, except the eyes, which were "strongly affected, much after the catarrh fashion," in consequence of the heat of the two preceding days. In the afternoon of the 8th, he went to Boston in the railway train. The engine was thrown off the track, and he did not get in before midnight. The next day he was attacked by the catarrh, and it subsequently ran its usual course. Before leaving Boston for Marshfield, he consulted his usual medical adviser, Dr. Jeffries, who promptly discontinued the polypharmacy to which he had been subjected.

Mr. Webster died October 24, 1852, aged seventy, of cirrhosis of the liver and inflammation of the membranes of the brain, without evidence of disease of the lungs or heart. The only peculiarity about the latter organ was an open *foramen ovale*.

CASE 4.

Thomas H. Farnham, Esq., Philadelphia, sends me the following account of his own case:—

"I was born in Philadelphia, where I lived during the winter, being in the country during the summer, and returning to the city often before the 20th of August. For eight or ten years past have spent my summers in Beverly, about eighteen miles above Philadelphia, on the opposite side of the river, going to the city daily. Have had catarrh twenty-three years, since I was four years old; a

maternal aunt suffers in the same way, but my parents are both free from it. It commences about the 23d or 24th of August, sometimes perhaps a day or two sooner, with great itching and irritation of the eyes, and running thereat; then sneezing, and running at the nose, which last ten or fifteen days, when it settles on the chest; the throat is filled with phlegm; breathing very laborious and difficult, with asthma, for another fortnight, finishing with bronchial irritation, which continues much longer. Never have had asthma at any other time, except once, when I was very much exposed and wet. The asthma is severer at some times than others, particularly after eating heartily; then it is much worse. When I am suffering from asthma, I am generally free from either running or irritation at the eyes or nose. It lasts till the latter part of September; by the first of October I am perfectly free from my cold proper; though sometimes for a year or two past, by not taking proper care of myself when it was passing away, I have had a cough for some time afterwards, generally a slight one, but still annoying. Sensitiveness of the nose and eyes of late years has increased. I am better during and after a cold rain-storm than in dry and dusty weather; have been in the city sometimes during the whole season, and at various places in the country, with no relief. Was at Cape May one year, and found it aggravated. Never was free from it for the whole season, until 1856, when I was in the highlands of Scotland. I was in England in 1850, in August; embarked late in that month for New York, where I arrived September 9th. I was entirely free until I landed, when the catarrh came on, and lasted till late in the month. For several years was at Andover, Mass., where the disease was somewhat lighter. In 1864 I went to the Glen House with the cold, August 22d, and found entire relief; went up Mount Washington, and walked down to Crawford's on the 24th; got wet through; and while my luggage was coming round, was obliged to dry myself in the sunshine, but without any bad effect. I stayed at Crawford House and Profile House till September 1st, entirely well. I then went to Andover, Mass., *via* Littleton; the catarrh came on very badly in the railway train, and I suffered severely all through the month. In 1865 I arrived at Crawford House August 19th, and during my whole sojourn there, till the 25th September, I did not experience the first symptom of the approach of my annual cold. I left the Crawford perfectly well upon the morning of the 25th of September, and arrived at Andover, Mass., upon the evening of the following day, without having experienced the slightest annoyance from the long and somewhat dusty ride from Littleton. I went to Boston upon the day following, and returned in the evening with a

slight cold in the head, which I think was induced by the heat and dust of the ride in the 'cars,' and perhaps, in a greater measure, by my own imprudence in getting somewhat overheated, and afterwards carelessly exposing myself to the air. I was troubled with a cough, not a very serious or annoying one, however, during October, though I do not think it was any part of my regular annual cold, but was one which I might have taken as easily at another time. Had I remained at the Crawford House until the 1st of October, when the cool weather would have permanently set in, I have not the slightest doubt that I should have had no cold whatever."

Mr. F. had been treated by several different physicians, among them homeopaths, without any other than very temporary relief; and expresses his conviction that there is no other remedy possible, neither prevention nor cure, than change of residence. "It is my firm and decided belief that any one troubled as we are, has only to remain in the mountains, at least that part of it where I was last summer, for the whole period during which his cold would continue, say from 18th August to 1st October, which I think would cover the whole time, to escape it entirely. To any one affected like ourselves at that season of that year, I would unhesitatingly recommend the White Mountains, with perfect faith in the efficacy of the remedy."

May 11, 1872, Mr. Farnham writes as follows: "I sailed for Liverpool last summer, August 19th, and had it (in eyes and nose) at the time. I had not been at sea a day and a half when it entirely disappeared, and I had no return of it whatever. I returned home October 24th."

CASE 2. REV. HENRY WARD BEECHER.

BROOKLYN, September 25, 1868.

DEAR SIR, — In reply to your request, I will give you some account of the "Hay Fever" to which I am annually subject.

Until I was about thirty-six years of age, I had no symptoms of it. I was not subject to catarrh or colds. On returning from a residence of from twelve to fifteen years in Ohio and Indiana, where I was at various times subject to malarial poison, I settled in Brooklyn, N. Y. The second year of my settlement here, say 1849, while at Woodstock, Conn., I caught cold, as I then supposed, about the middle of August. The next year I noticed that I caught another cold, at just the same time. When, on the same date, the third year, I caught cold, I began to inquire about it, and then learned I had *Hay Fever*, or *Hay Asthma*. I have, with the exception of two years, had a return of it so punctual, that I have always admired, rather than desired, this instance of the regularity of nature.

There are four stages of the disease in my case :—

1. From the first of August to the 17th–20th, there is, I am persuaded, a slight febrile disturbance of my system. Ordinarily it is not troublesome, or even noticeable. But the least cold taken, or the slightest irregularity of diet, develops heat, and a kind of knitting of the sutures of the skull, as if they were slightly moving, or matching themselves over again. Sleep is also full of dreams, not celestial. But the whole passes so lightly, that I did not, until within three years, make it a matter of study.

2. On or about the 17th of August, the second stage is developed. My eyes puff out, are very sensitive to light, and full of tears. My nose is exquisitely sensitive, and subject to incessant and copious defluxion. The slightest draft of air produces sneezing of the most enterprising character. To sneeze in tens and twenties, with repeats *ad libitum*, is part of my daily duty. The odor of flowers, smoke and cinders in cars, dust, perfumes, or anything ordinarily without disagreeable effects, now produce sneezing, and a copious secretion of thin and watery mucus. This stage lasts about a week or ten days, — my eyes growing worse, and the light more intolerable. A walk of half an hour in the full sunlight is enough at any time to bring on a paroxysm in every symptom.

3. After about ten days the secretion becomes thicker, the nose is stuffed ; the *eye* grows stronger, but the *lids* are inflamed, and itch incessantly. The *alae* of the nostrils also are vexed with sharp and itching paroxysms. During all this time my appetite is moderate, digestion good, and sleep undisturbed. Otherwise than the difficulty of using the eyes, there is no hindrance to intellectual labors.

4. About the fourth week the eyes are entirely well, the nose somewhat congested still, but the disease drops down upon the chest, asthma develops, a convulsive cough sets in. In the morning I raise a thick starch-like mucus, without blood, or any other admixture, but like calf's-foot jelly. It has a slightly metallic taste. This stage lasts about a week or ten days, and then the disease quietly disappears ; or else it breaks up with some row in the system, — such as a breaking out all over the body of itching blotches ; or a violent night of cough and asthma, that wrenches everything about me.

The attack often, in the beginning, comes on so suddenly that whereas at tea I am entirely well, in ten minutes after I am deluged with tears, and flowings at the nose. In other seasons the inception is more gradual.

The same feature is observed in the close. Sometimes it ends so abruptly, that after a night of suffering, I awake without a symptom left. At other times it oozes and creeps away, like a rill gradually drying up.

During the whole period of from five to six weeks, the disease is subject to distinct *remissions*. Although I have had thirty years' experience, I am not cured of believing, every year, that it has ended its career two or three times during its progress. A day of violent perturbation is sure to be followed by a day of quiet. Two or three days of a very little disturbance break out into a great uproar. I have not noticed that alternate days are, regularly, well and sick days respectively.

My temperament is mixed, predominantly sanguine nervous, but with a dash of bilious.

As to treatment: After the disease has begun, no treatment has ever checked or cured it. But, where I have taken a preparatory course, I have sensibly alleviated it, and shortened its term.

It should be added, that I live during July, August, and September, at Peekskill, forty miles above New York, on the Hudson River, among the highlands, on a high, dry, and warm piece of land. I have never spent a summer in the city, and shall never, if I can help myself. I had rather have "Hay Fever."

The two summers that I visited Europe, I was entirely free from it. During the week that it was due (in 1863) I was in the Tyrol. On the 17th of August it came, knocked, and looked in upon me, but did not stop. There was a single hour of mild but unmistakable symptoms, and only one.

I have abundant evidence that change, not of place, but of climate will prevent it. The Catskill Mountain House is filled every summer with fugitives from "Hay Fever," and they find immunity. Some of my friends escape it by going to the Adirondacks, and some by a tour through the Lake Superior region. The Fire Island Hotel is a great resort of New Yorkers who are afflicted with ophthalmic catarrh. Fire Island is about fifty miles from New York, on the ocean coast of Long Island.

A sister is a sufferer, and a brother's son. No others of our family have been attacked. Many gentlemen in New York arrange their business so as to make an August voyage to Europe, thus escaping the inception.

A lady sends me word that she has cured herself permanently by using sulphur three times a day, as we used to take it when children.

If there are any other points on which I can give you further information, I shall be happy to do so. I am very truly yours,

HENRY WARD BEECHER.

MORRILL WYMAN, M. D., *Cambridge, Mass.*

In 1871 Mr. Beecher was completely relieved at Twin Mountain House, White Mountain region.

CASE 1. HENRY W. HAYNES, Esq.

35 COURT STREET, BOSTON, October 26, 1860.

DR. MORRILL WYMAN:—

Dear Sir,—Understanding that you are desirous of receiving a written statement of the characteristics of my “case” of “Hay Fever,” I hasten to transmit it, sincerely hoping that your studies may result in some discovery beneficial to all of us companions in misfortune.

I was born in Bangor, Me., and lived there till my tenth year, when we removed to Boston, where I lived till the summer of 1846, when we removed to Cambridge in my fifteenth year. My trouble commenced that autumn (which I recollect as very hot, dry, and dusty), and has continued till the present time, varying in intensity. This year it began somewhat later than usual, upon August 26th, instead of August 20th, when it usually commences. I went to bed perfectly well; in the night the wind changed to the west, and when I woke my nose began to run. From that day till now I have remained in Boston all the time, and have not suffered very much, though the complaint has lingered longer than usual, and has entirely disappeared only within a few days.

In three different years I have suffered from difficulty of breathing, which has been entirely relieved by the use of French medicated cigarettes. I find my complaint much aggravated by hot, dry, and dusty weather, and riding in the cars at such times makes me very unwell indeed; while in damp, rainy, or cold weather, and in east winds, I am a great deal better.

Two years ago I was troubled very much in Boston, and went down to the Isles of Shoals, where I arrived much worse from the journey. I do not think I derived any benefit from the air there; certainly I suffered more from difficulty of breathing than ever before.

A year ago I went to the White Mountains, intending to be there at the time when the trouble began, and to remain there some time. I escaped with merely the slightest symptoms of a cold in the head, and was perfectly well for several days after the ordinary period of attack. Business, however, compelled me to return to town earlier than I had anticipated. I left the Profile House early in the morning perfectly well, and was perfectly well when I entered the cars at Plymouth, but after riding an hour my trouble commenced, and it had its regular career that year, accompanied with difficulty of breathing.

In 1855 I was in Europe, and left Paris for Switzerland, at about the period of attack. After riding all day in the diligence from Dole to Geneva, over a dry, dusty, limestone country, on arriving at Geneva I was in a bad condition. But all the next day I remained in my hotel, taking laxative medicines, and on the following morning started for Chamouny; my trouble left me forthwith, and I suffered no more that year.

Sometimes the disease is accompanied by great inflammation of the eyes, but for the last two years this symptom has not appeared.

My attacks begin August 20th (or within a day or two of that date) by a slight stuffing up of the nose — by a week I begin to sneeze — paroxysms principally in the morning on first getting up, so that sometimes it takes me more than an hour to get into a condition to permit of my attempting to eat; also I am subject to paroxysms in the evening, apparently caused by night air; and sometimes at other times in the day; by a fortnight my eyes are greatly inflamed and my throat very sore; these symptoms continue about a fortnight without much abatement, then the bronchial tubes and lungs begin to be affected, and the symptoms in the head grow less severe; sometimes I have an asthmatic attack, but by no means every year. The running from the nose lasts up to the very end of the attack, which is at the beginning of cool (or rather coldish) weather, say the first slight frost; but this running is most severe about the middle of the disease.

I have never noticed any effect produced by exercise, but I always find great relief in damp and rainy weather; the hotter and dryer the season the greater are my sufferings. It seemed to me (up to last season) that my attacks were growing less severe year by year, but last year I had the worst time of any, and was perfectly prostrated by the complaint, and did not get over it till December. I have never experienced any relief from medicines and medical treatment, though I have tried a great many remedies which others have said to be efficacious in their own cases.

I am much better in the city than in the country. In 1864 I was in London during the period of the attack, and entirely escaped, not perceiving the slightest symptom, but having returned home on October 1st, I was slightly affected after that time only in the nose. However, this exemption, as also when I escaped attack by being in Switzerland in 1855, was followed by a severer attack in the following year. The sea-side only benefits me by its being cooler there, but the mountain air seems to afford me a remedy. I have not been at the White Mountains since 1860, and I have never noticed any difference in the effect of one side of the range from that of the other.

To sum up my own experience of what procured me the most freedom and relief from suffering, I keep in the city as much as possible, avoiding going into the country, and particularly riding in the cars, as their dust and smoke is the most exciting cause of the stuffing up and sneezing that I know. I keep in the shade, as sunlight makes me sneeze; I live lightly, and avoid wine and liquors; don't eat much meat; keep as cool as possible, especially at night; and then if the season is decently cool, and there is no drought, I get along pretty well. I think my eyes have not troubled me so much of late years as they did before I understood better how to manage myself.

I find that the scent of full-blown roses makes me sneeze, and once I was picking strawberries in a hay-field in July, and suddenly found myself attacked by a violent fit of sneezing and running of the eyes; but it soon left me after I had bathed my head in cold water, and retired to a cool room.

I wish that I felt a little more able to "deliver" a more "varnished tale," but I believe I have stated everything that occurs to me as likely to be of service to you. I ought to state that I think the "cold" is a disease, attacking the whole system, and attended with a good deal of fever; certainly it often makes me very sick, used up, and good for nothing; but on the other hand, I never suffer from colds, or very rarely, and enjoy good health, having never been sick before this malarial fever, caught on the bar of the Mississippi River.

I suppose you ought to know that my father was a great sufferer from asthma, when I was born, and died at the age of thirty-seven, of consumption; my mother is living, and is perfectly healthy.

It is needless to state that I have tried numerous remedies without success, and that I have no confidence in any alleviation except the air of the mountains; if I cannot be there, I think I suffer less in the city.

Hoping that your studies may prove beneficial as well in your own case as in that of others, I am,

Very truly yours,

HENRY W. HAYNES.

1872 was spent in Keene Flats, Adirondacks, with relief complete.

CASE 60.

For the following case I am indebted to Dr. George Derby of Boston: —

Mrs. G. D., Boston, has had catarrh since ten years of age, which she remembers to have first noticed when peaches were ripe, a basket of them immediately producing catarrhal symptoms in the nose and

eyes; so would certain flowers, the geranium, and especially the heliotrope, but not the rose. An annual catarrh has for the past six or eight years commenced between the 15th and 18th of August, and continued till about the 1st of October, or until frost. The first indications are itching and watering of the eyes; the itching is almost intolerable, especially at the inner angles of the eyes; profuse discharge of limpid water from the nostrils, especially in the afternoon. In a day or two there is itching in the back part of the throat, and near the upper part of the larynx, and in the roof of the mouth. The nostrils are very seldom obstructed as in an ordinary cold. In the night, if the windows are carefully closed, she has but little trouble, but if they are open, she suffers more than during the day. The senses of taste and of smell are impaired. This state of things continues about two weeks, when irritation commences in the throat, with cough, at first slight and not very frequent, and without expectoration. This cough increases, and during the last two weeks becomes extremely annoying, and almost incessant while lying down, compelling her to sleep in an almost upright position. The disease may be considered as at its height on 1st September. From this time all the troubles diminish; the head symptoms first, the discharge from the nostrils becoming gradually less profuse and more consistent, and the cough less constant and irritating, and by the first of October the disease has disappeared. The influence upon the system generally exhibits itself in a loss of strength, loss of appetite and flesh, also a sense of chilliness of the whole body, which prompts her to use more clothing than most persons, especially at night. She is never so comfortable as when so warmly covered as to produce more or less perspiration. She thinks the disease has increased in severity during the past few years. As a girl she had no cough. For several years resided in Cambridge, and suffered much while there. If she went to Boston, and walked in the hot sun, she would be almost entirely free, but would experience a renewal of the paroxysms on her return to Cambridge. During several seasons she was at Swampscott, Nahant, or Newport; all of them at the sea-side, without any relief. In 1862, 1863, and 1864, went to the White Mountains. In 1862 she was suffering severely in Cambridge, and went to the White Mountain Notch (Crawford House), and remained ten weeks with complete relief. She then returned to Cambridge, and suffered two weeks longer severely; in fact, she suffered till the end of the usual period. In 1863 she got no relief at North Conway, about twenty miles south of the White Mountains, and went to the Crawford House again, where she was relieved, but not entirely. She then went to the Profile House, at Franconia, and during the

ride over improved; on her arrival was nearly well, and remained entirely free from her enemy during that year, returning home October 1st. She never suffered from asthmatic breathing until September, 1864, four months previous to the birth of her first child. She then suffered severely, and went to Franconia for relief. She was much annoyed during the railway ride by the cough and asthma. The air was cold and damp, without sufficient fires, at Franconia, and although she tried various remedies, she got no relief, during the whole season suffering as much in every respect as ever before. 1865 she passed in Augusta, Maine. The attack came on at the usual time, and she suffered as severely as at Cambridge; going into the garden, or into the dusty street, brought on a paroxysm of sneezing, itching of the eyes and ears, and the other usual head symptoms.

As far as medical treatment goes, she has not taken much. Morphine has not given her so much relief as the "elixir of opium," which diminishes all the head symptoms, but as it produces nausea, she has used it but little. The snuffing of Cologne water, or strong alcohol, gives relief. She has tried the burning of paper impregnated with saltpetre, and she smoked the arsenical cigarettes during the year she had asthma, without relief. In fact, nothing has given her relief but a residence at the White Mountains during the period of attack.

In 1868 Mrs. D. was at the Waumbec House, Jefferson Hill, but after a week's residence there without relief, returned home by the way of Littleton and Plymouth. "I suffered there from our horrid cold as much as I ever did in Cambridge. I was sorely disappointed, for I had persuaded my husband to take us up there, promising him that I should be well, and should have no use for a handkerchief, and should breathe like an infant, if I could only be on Jefferson Hill. Such is life.

"The ride in the cars was terrible torture to me; cinders poison me more than flames. I really thought I should choke to death. The asthmatic part of the affection increases with my years. I cannot sleep like a Christian."

CASE 57.

The following case was sent me by my friend, the late Dr. Anson Hooker of East Cambridge, Mass. : —

Mrs. A. H., when eighteen, first noticed being affected by the aroma of roses. The following year, while picking some roses, felt an itching in her eyes. This was in the morning. The itching in-

creased, and by afternoon was so intolerable, she asked medical advice. After this she could not be in a room where there were bouquets, or many flowers, without itching of the eyes and other catarrhal symptoms; often obliged to leave an omnibus when large bouquets were present. This state of things continued for about ten years, when she began to have the regular Autumnal Catarrh. After this she was not so sensitive to the aroma of flowers; still she could not be much in their immediate atmosphere and not feel their influence. We can never have many flowers in the house unless in a glass vase. This much I premise before speaking of her Autumnal Catarrh.

She must have been about twenty-eight years of age when she began to have her periodical attacks, or to notice them as periodical. At this time she resided at East Cambridge, and since; in fact, her residence has been here since she was fourteen years of age.

She has tried change of residence during the attacks. She first tried Nantucket;¹ was more comfortable while in the town of Nantucket proper, but not very decidedly relieved. The air at Siasconset, a little village at the opposite end of the island, was too bracing or irritating to the mucous surfaces already inflamed. How it might have been if she had gone there before the catarrhal attack came on, is a question. She has also tried the Isles of Shoals. While there, she has had the attacks milder, but not so great freedom from them as to counterbalance the discomforts of being from home. At Mount Holyoke she is pretty comfortable till the winds blow hard, and fogs come upon the mountain; then she starts for home.

The severity of the attacks vary with the seasons and her exposure. If, while the attack is on her, she is much exposed to dust, as in traveling, or to be out in a breezy day, or to be obliged to talk very much, the troubles are much aggravated. She is not aware that under the usual circumstances the attacks are more severe of late years than formerly. Indeed, I think she suffers rather less than formerly, because we *prepare* and *protect* her better than we used to.

The attack comes regularly during the third week in August.

The eyes are the first to be affected, then the nose, throat, the ears, and bronchia. The itching of the eyes and nose and throat is intolerable, and very much aggravated by rubbing, blowing of the nose, or talking, or singing, or much exercise. There is a profuse watery secretion from the nostrils, and considerable mucous dis-

¹ Nantucket is an island lying off the southern coast of Massachusetts, about twenty-five miles from the main-land. The Isles of Shoals are a group of small islands, eight or ten miles distant from Portsmouth, N. H.

charge from the throat and lungs. At times has asthmatic attacks — the feeling of breathing through gauze or sponge. She has had so much of this catarrhal inflammation, that the mucous membrane of the nostrils is permanently thickened, obstructing them to such an extent as to oblige her to sleep with her mouth open. The cough and mucous expectoration does not come on till the attack has existed a fortnight or more.

Is better in quiet, dry weather; is worse in damp, windy, dusty weather. Heat or cold does not disturb. No itching of the skin. Is now fifty-two.

She thinks she is as comfortable in her own quiet chamber as anywhere. In windy days, to shut up tight, and keep as far as possible all vexatious intruders away. Cannot be out in the damp evenings of September. The first *good* frost in October is a godsend to her; till that comes, her troubles last, and she is not even relieved.

Our aim is to put her in the best state of health we can before the season of the attack, that she may the better bear the misery that awaits her. If she is otherwise in good health, I think the attacks are less severe.

Inhaling moderately chloroform has relieved the nostrils more than anything. Of course the effect is but temporary.

I will add, that all fruits in an uncooked state, except strawberries, inflame the mouth and throat, and bring on itching. Melons, tomatoes, etc., sliced and placed upon the table, have to be removed. If she pares an apple or an orange, the eyes and nose are immediately in trouble, and this at any season of the year.

Mrs. B., her eldest sister, has some of the same affections, but not so persistently. Her attacks are occasional. Itching of the eyes and difficulty of breathing are her principal annoyances.

DEAR DR. WYMAN. — The above, I believe, answers all your inquiries about Mrs. H.'s catarrhal history, which I am happy to give you. If yours is any worse, *we* pity you; if it is not so bad, we know what you must suffer.

Some of our acquaintances have been benefited by living at Fire Island, off New York, where Margaret Fuller was shipwrecked.

Sincerely yours, etc.,

July 20, 1865.

ANSON HOOKER.

CASE 7.

For the following account of his own case, I am indebted to the late John C. Hayden, M. D., of Cambridge, Mass : —

Boston, October 19, 1857.

DEAR DOCTOR, — My reason for not answering immediately your inquiries respecting my annual catarrh, was that I had not any dates or notes as to its progress and symptoms, to which I could refer. I believe, however, that I can give you all the information you desire from memory alone, which has just been so perfectly refreshed as to the symptoms. During a period of at least thirty years, I have had an annual return of this affection about the last week in August; its commencement, symptoms, and progress have always been about the same. It always commences with a heaviness of the eyelids, itching of the inner canthi, and occasional sneezing. After a few days there comes on an inflammation of the mucous membrane of the nostrils, extending upward to the frontal sinuses and eyelids, and downward to the velum palati, pouring forth a profuse thin secretion; frequent and protracted sneezing, sense of tightness in the forehead; a spasmodic closing of the nasal passages, suddenly relieved by a change to a warmer or colder atmosphere, and as suddenly recurring, without apparent cause. The same spasm occasionally extends to the bronchi, producing slight asthma, neuralgic pains about the head, and in various parts of the body, lassitude, depression of spirits, burning sensation extending down the oesophagus to the stomach; the digestive organs are not affected. No cough, excepting sufficient to dislodge a somewhat increased secretion from the lungs. These symptoms continue about three weeks, and then abate gradually, until the 1st of October, when they disappear entirely.

I suffer less from the disease than in former years, and find that it commences later; it is much less severe in the city than in the country, and is much aggravated by exposure to night air. The only remedies I have used have been external applications to the eyes and head, and inhalations of the vapor of hot water, ether, alcohol, etc., but I have received from them but slight relief. I have given you above as full a description as I am able of my September cold; and if it assists you in your investigations of the disease, it will much gratify,

Yours sincerely,

J. C. HAYDEN.

Dr. Hayden's health was generally good, until his death by apoplexy in 1869.

CASE 28.

For the following case — that of the Hon. Lemuel Shaw, late Chief Justice of the Supreme Court of Massachusetts — I am indebted to his son, Lemuel Shaw, Esq., of Boston; and also to the late Dr. George Hayward of Boston: —

He had suffered from youth with annually returning attacks of catarrh, which commenced between the 20th and 22d of August (or, as Dr. Haywood thinks, August 18th, almost at the same hour of the day). It was ushered in by pretty strong febrile symptoms, — pain in the head, rapid pulse, a hot and dry skin. After one or two days appeared the unmistakable catarrhal symptoms, especially a severe cough, with a very copious discharge of viscid mucus. When near the end of the first stage he had attacks of asthma, generally each night; but more certainly, and with more severity after active movements, ascending a hill, mounting stairs, or after a rich meal. He was probably more liable to these attacks after exertion, on account of his weight, which was considerably above that of most persons (more than two hundred pounds). After about five weeks came the last stage, during which Judge Shaw was obliged to make a railway journey of some forty miles, to hold court. The disease did not disappear before the middle of October; a stay, therefore, of about seven weeks. One year he left Liverpool September 20th, and arrived in Boston October 1st. He was perfectly well until his arrival in Boston; but within two days the disease appeared, and went through its regular course.

His last access, in 1860, at the age of eighty, was less severe than the preceding; but almost from the commencement appeared signs of organic disease of the heart, which was developed after the catarrh had passed, but not sufficiently for special diagnosis; the movements of the heart were increased and violent. There was water in the pericardium, thorax, abdomen, and under the skin. Still, the general health remained tolerably good. He was able to ride in the open air, or walk; and even the second day before his death he could attend to his professional duties. Finally, in March, 1861, brain symptoms appeared; he was restless, incoherent in his speech, had hallucinations, with short periods of deep sleep, followed by a speedy and quick death from effusion upon the brain. There was no examination *post mortem*.

Dr. Haywood was of opinion that the heart disease was increased,

if not produced, by the breast symptoms of the catarrh, especially by the long continued obstruction of the circulation through the lungs.

The mother of Judge Shaw had Autumnal Catarrh, and he was the only child who arrived at maturity. Judge Shaw had four children. One son has Autumnal Catarrh; one son and one daughter have summer catarrh in June. The son who has Autumnal Catarrh has a daughter, now twenty-two years of age, who for six or eight years has had Autumnal Catarrh; a son has neither of the diseases, although arrived at adult age.

CASES 5 AND 6.

To Dr. George H. Lyman of Boston, Mass., I am indebted for the following history of cases : —

Boston, May 26, 1866.

MY DEAR DOCTOR WYMAN, — I hasten to answer your note as to Autumnal Catarrh. I am only sorry that I shall be able to give you so little that will be satisfactory. The only two cases which I have had under observation from the *very inception* of the disease, and continuing under observation for any length of time, namely, eight or ten years, or more, were my own son, and the son of Amos A. Lawrence, Esq. I give in brief the details, so far as my memory serves me; for such notes as I had have been lost or displaced during my five years in the army.

My son, now fifteen years of age, when two or three years old, was attacked in August; duration until cold weather; most severe last of August, beginning with snuffling, and soon profuse discharge from Schneiderian membrane, and, almost simultaneously, itching, congestion, and lachrymation; deglutition somewhat interfered with, though no marked trouble of ears or throat; cough never severe, and more due apparently to the irritating nasal secretion than to any positive affection of the posterior air passages. Asthma slight, and no appreciable pulmonary symptoms; general health, strength, and flesh but slightly affected. Smoke, night air (especially about sunset), and gaslight, always aggravating the oppression and discharge. As year after year its periodicity became more certain, different summer localities were selected; under Blue Hill, at Milton; Nahant, Swampscott, Springfield, and town residence; and the last year the White Mountains. No apparent difference, though for the last few years the intensity of the attacks has gradually diminished. Last year, at Conway, was quite as bad as the year before at Swampscott. I *think* there has always been some irritability of the skin during the

attacks. The congestion and secretion from eyes and nose are always present; but paroxysmal aggravations of short duration coming on at intervals of an hour or two, more or less.

I have exhausted the *Materia Medica* upon him, — iodine, potash (separately or combined), arsenic, opiates, expectorants, etc., — but without any appreciable benefit. I have at last concluded that strict attention to the digestive organs has been of more service than all the rest. *He* thinks that a dose of Tully's powder (Dover's powder and camphor) at night has given him relief, and I think he is right. He is now, and has been, away for a year at school, in Concord, N. H., except in summer vacation; and thought that the duration of the disease, on his return thither in September, was much shortened.

The other case — that of young L. — commenced at Lynn, in September, 1852, he being, I think, four years old. The attack was very sudden and severe, alarmingly so. I supposed it a case of bronchitis; it lasted, however, a long time. The febrile symptoms soon yielded, but the irritation of the mucous membrane was not allayed until cold weather, and was early accompanied by severe asthmatic paroxysms, the eyes and nose being affected as in ordinary severe catarrh. I think there was no trouble about the ears, throat, or skin. I think in October he was removed to Concord, Mass., and there remained some weeks. I should say that the face became puffy and swollen from the severity of the asthmatic complication. These attacks recurred annually about the same period, but never again accompanied by the severe pulmonary symptoms. He is now strong and hearty, and I think has about, if not quite, outgrown the difficulty. I have never been able to satisfy myself that he was benefited by remedies; but Mr. L.'s house, at Lynn, directly on the sea, was always unfavorable to him, and inland localities less so.

I shall look with interest for your published views; and if you can enlighten us, you will have the satisfaction of removing one of the opprobria of the art or science.

I am, my dear doctor, most respectfully and sincerely yours,

GEORGE H. LYMAN.

July 18, 1871, Doctor Lyman informs me that his son has been somewhat relieved by the use of sulphate of quinine, which he directs from the middle of July in doses of two grains twice daily. But he has received the greatest relief by a visit to the White Mountains, at Gorham,

and at Success, a town six or eight miles farther north. In the latter town he was in camp, at a distance from cultivation of all kinds, and was quite well.

CASE 3.

For the following description of his own case I am indebted to John J. Dixwell, Esq., of Boston, Mass : —

I have suffered from Autumnal Catarrh since forty-five years of age, about fifteen years. The attack begins between the 25th and 28th of August, with paroxysms of sneezing and affection of the eyes. The affection of the eyes one year preceded by three weeks the other decided symptoms of catarrh, the eyelids becoming glutinous and uncomfortable. I have never suffered from itching of the internal ear nor of the soft palate. Early in September a bronchial affection sets in, when the nasal catarrh has diminished, and continues through the month and sometimes through the whole winter. I have never had asthmatic troubles, although I have had some difficulty of breathing in going up hill, which has increased very much during the last two or three years, caused by a certain degree of enlargement of the heart. During the attacks I lose flesh and strength. The severity of the whole disease varies somewhat in different seasons; the time of commencement of the attack depends somewhat upon accidental exciting causes; a ride in the railway train with its smoke and dust, or a visit to a cotton mill will hasten the period of annual attack materially.

My first attack was while living in Boston and vicinity, mostly in Boston, and I perceived no difference in severity whether I was in Boston or the country. One year I spent entirely in Boston, except in the afternoon, but without relief. It gradually increased in severity at each annual return, and I found myself more liable to catarrhal affections at other seasons of the year. But I have never had the June or "Rose Cold," or any catarrhal affection before the 25th of August.

Each year since 1863 I have visited one or more of the various places of summer resort in the White Mountains, Gorham, the Glen House at the foot of Mt. Washington, the Crawford House, and the Waumbec House in Jefferson, and during these three years I have had no attack of catarrh, although I have had some slight irritation, not enough to annoy me; no irritation of the eyes or throat, no cough. I arrive at the mountains from August 22d to August 24th. In no other place have I been relieved; the sea-coast

aggravates my troubles. One year I went from Gorham down to North Conway (twenty miles south on a lower level and in a valley); I remained there two days and a half, but was obliged to return to the mountains; the catarrh attacked me and steadily increased; I then went to Crawford's, and was free from it for the rest of the season. The general tendency to catarrh at other seasons, which was previously increasing, has greatly diminished since my first visit to Gorham in 1863.

I have tried a great variety of remedies — balsam of copaiba, until its peculiar eruption was produced; nux vomica, strychnine, cubeba, inhaling the smoke of burning powdered opium; I have derived the most relief from morphine; laudanum and glycerine applied to the nostrils has given relief.

E. S. Dixwell, Esq., a brother of Mr. D., is also subject to the disease; his first attack was much later in life.

JEFFERSON, September 25, 1868.

MY DEAR SIR, — I cannot answer your note better than by giving you my own experience:—

My cold did not formerly come on till the 27th or 28th of August, but a railroad ride of some hours has always precipitated it temporarily, when coming up here some days earlier, and I have more of it in dry and hot weather than in cool and damp days. For the two years past my case has been modified by some enlargement of the heart. Asthma with shortness of breath, has prevented exercise, and impaired my former vigor.

Last year I left on the 24th for Burlington, Vt., going through in a day, and wearing a veil. It had rained the day before between Boston and Rutland, but at Burlington they were parched up by a long drought. I got the cold about twenty miles from Boston, had it all day, and had a dreadful night at Burlington. It lingered about me at times there, and on the way to Stow for two days. On the 27th, I went to the top of Mt. Mansfield, and found myself entirely relieved; came down to Stow next day, and remained there well two days. I found there Commodore I. of Philadelphia, who has suffered for fifteen years, and who was then nine days over his time, at Stow, without any cold. I then went on to Jefferson, suffered again on the cars, and had another bad night at Littleton, though not so bad as before. Reached Jefferson on the 3d, and remained there till the 26th of September. For several days after my arrival, I had occasional attacks of catarrh, and my eyes were considerably inflamed, and through the whole month I had more of it

than ever before at the mountains. Still my condition was vastly better than it had ever been in Boston during the same period, and comparatively I might call it relief.

This year I left home a good deal fagged, on the 22d, after a copious rain which had laid the dust all through the country. I had some catarrh before I left home, and took a small dose of morphine before breakfast, and it increased through the day. I wore a veil, but my eyes became very much inflamed, and I reached Willoughby Lake at 7 p. m. and had a pretty good night. I remained there almost free from catarrh, but with my eyes considerably inflamed, till the 29th, when it came on. The air was very much loaded with smoke from burning woods. On the 30th and 31st, I was on my way *via* Island Pond, to Gorham, riding through a district full of smoke; arrived at Gorham 31st at 9½ A. M., and went on to Jefferson on the morning of September 1st, with the cold all the way till we were four or five miles from Gorham, when we had a copious rain of an hour, washing the atmosphere, and bringing much relief at once. It took several days to allay the irritation of my eyes, and I have had some slight and short inconvenience at times, but the relief here may be said to be almost complete, and my general condition greatly invigorated.

There were some sixteen or eighteen persons here last year, and about as many this, all enjoying entire, or very nearly entire relief; the exceptions being only short and temporary; among them Mr. and Mrs. W. of Boston, who are both curious and severe cases. He was perfectly well for the first time in twelve, and Mrs. W. (with the exception of a single day after unusual exposure) for the first time in twenty-four years.

I infer that my experiments in moving about to try new places, and my own impaired condition, have exposed me more during the last two years, and thus account for the less favorable result on myself, especially as others do not appear to have been similarly affected, and consider that the air here may be regarded as sure to give an amount of relief almost, if not quite complete.

Very truly yours,

J. J. DIXWELL.

CASE 9.

Mr. Fisk, the writer of the following letters, was born in Cambridge, Mass., and suffered from Autumnal Catarrh before he was twelve years old. At sixteen he had an affection of the lungs, for which he went to Cuba.

While in college at New Haven, Conn., and also when in Boston, Mass., he had his annual attacks; but during several autumns spent at Saratoga he had some relief. In 1857 he removed from Cambridge to St. Paul, Minn., on the Mississippi, and from that city sent me the following letters:—

ST. PAUL, MINN., *September 14, 1857.*

In a letter recently received, I learned that you were making inquiries about the condition of my head, eyes, lungs, etc., at this time, and whether I was escaping any of the annoying symptoms of the catarrh, which have heretofore so much affected me at this season of the year. As I have heretofore been more severely affected than any one I ever knew who is troubled in a like manner, I did not expect wholly to escape this year. Usually I have been taken about the 20th of August, as with a slight cold in the head. You know the progress of the complaint very well; about this time, and for a week before, I usually have had a high fever every afternoon, and after nightfall have had great difficulty in breathing. By the 25th of September I have generally been pretty well again excepting my eyes have been rather weak, and the mucous membrane of the air passages generally a little sensitive. During this summer I have not had that dryness of the fauces and the nostrils which has formerly been the case. As the 20th of August approached, I watched for the early stage of the catarrh to appear, but was so free from any affection of that kind, that on the 25th I rode out some three or four hours' ride into the country through corn, wheat, rye, and oat fields, without any inconvenience, and returned the next day in the same manner. Up to the present time I have been free from any of the symptoms of the catarrh, excepting perhaps one or two mornings, when I felt as if I had taken cold slightly, during the night, which is not at all improbable, as the head of my bed stands close to the open window, and the wind was blowing directly on to me all night. I have been thus particular, as you expressed a desire to know how I was passing through this period of the year, and I have escaped so well; the result would probably be the same with any other, which is the fact you wish to get at.

We have a most beautiful country, not surpassed in the whole West. The great charm is in the climate. We are at an elevation of about eight hundred feet above the level of the sea. We have a dry, bracing, exhilarating, invigorating, and pure atmosphere. This climate is peculiarly favorable to persons having any pulmonary weakness. There are persons in this town, in the enjoyment of good

health, who would have been in their graves long since, had they not come to this territory. If a person is heard coughing in this city, we know, without asking, that he or she, as the case may be, "has just come up the river." Coughs and colds are exotics in this climate.

STATE LIBRARY, ST. PAUL, MINN., *September 12, 1862.*

My autumn cold, when I lived at the east, was very punctual in its advent after the 20th of August. The mucous membrane of all the air passages in time became very much inflamed. For many nights after the 1st of September, till about the 12th, I was unable to get any comfortable sleep, because of the severe attacks of asthma, which were always a part of the infliction, and generally every afternoon I was mentally and physically prostrated by a hot, dry, burning fever.

Since I have been in St. Paul, I have known nothing about an autumn cold, such as I knew it at the East. At the East I suffered severely from inflammation of the eyes, which inflammation extended all through that region of the head. I have had nothing of the kind here. At the East, usually for one full month, I was unfit for any duty, but now I am able to accomplish a full day's work, every day from the 1st of August till the 1st of October.

In my judgment, a person coming from the East here, merely to avoid having the cold at the usual time, could not wholly escape. I was East during the summer of 1859, and on my return reached home about 20th August. I brought back with me enough of the eastern influence to give me some trouble for two or three weeks.

I think I received more relief from the use of iodide of potassium with the syrup of sarsaparilla, than from any other medicine I ever used.

Very truly yours,

ROBERT F. FISK.

Mr. F. suffered much during his attacks from the irritability of the mouth, tonsils, and fauces, which became red and sensitive during the progress of the disease. He remained in Minnesota till 1863. From June till October of that year he suffered from what was supposed to be rheumatism, a painful affection of the feet, ankles, and legs, compelling him to keep his bed most of the time. In December he had so far recovered as to make the journey to Washington, although he had a severe cough. Soon after his arrival in Washington, while walking in the

street, he was seized with difficult breathing, and died in about fifteen minutes, at the age of forty-four.

CASE 58.

Mrs. J. B., age 46. Since sixteen years old had a cold in June most severe when hay was in the field; first felt when in New Bedford, Mass., while walking in a garden. It commenced with sneezing, watering and itching of the eyes, itching of the back of the throat, and in the ears, also itching of the whole scalp. The discharge of limpid water from the nostrils was most profuse, saturating a handkerchief in a few minutes. During damp weather, much less trouble, some days none; dry, dusty weather increased it, but heat had little or no influence. The first *Autumnal Catarrh* was about 1st of September, 1850, at Fitchburg, Mass., while on the way home from the White Mountains. From that time to this, the attacks have recurred annually. Although the June Cold has very much diminished in severity and in length, still she is even now annoyed by going into a hay-field, or even into a barn when the hay is moved, even in winter, or by dusty carpets. All these causes produce sneezing, watering of the eyes, and tickling of the throat. The early symptoms of the *Autumnal Catarrh* are almost precisely like those of the June Cold. It commences about the 17th of August, and increases till the 1st of September, at which time a cough commences, which she never had with the June Cold, and which now is not severe. From the 1st of September the head symptoms begin to diminish, varying with the season, and especially with the dryness of the weather, which invariably increases its severity and prolongs its duration. The irritation of the skin, especially of the scalp, is quite annoying, and the irritation of the nostrils and the sneezing are more severe on first rising in the morning, and while dressing the hair. During the disease, her strength is reduced, and her appetite and flesh decidedly lessened. The natural termination of her troubles is the 1st of October.

She tried a residence at various places, but usually at Belmont, Mass. During three seasons she was at sea in August and September, and escaped the autumn cold entirely. She also escaped the June Cold during the four years she was in England, or on the Continent, and suffered less from it in Boston. For the autumnal cold she has never tried the sea-coast. She arrived at the White Mountains in the train on Saturday, September 1st, with a very severe attack. The following day she was better, and on Monday well, and so remained during the ten days she was there. On her return to

Belmont, she again experienced some trouble, but by no means severe. For the past two years she has resided in Boston, but has had no relief from her autumn cold. *Nux vomica*, and a great variety of medicines, have given no relief. *Cubebs* have relieved her somewhat, and the irritation of the nostrils has been lessened by cayenne pepper and ammonia.

Mrs. B. went to Brunswick, Maine, August 7, 1866, then to Bangor, and remained well till September 5th. On that day took the evening train for the White Mountains; reached Jefferson Hill the same day, and remained well till October 1st. She then returned to Belmont, and in a few days went to Philadelphia. Immediately on her arrival in Philadelphia, she was seized with the usual symptoms of Autumnal Catarrh, which did not abate until she went to New York a week afterwards. The flowers were in full bloom in Philadelphia during her visit there.

The following letter from Colonel George F. Towle, U. S. Army, is a very important contribution to our knowledge of the geographical distribution of Autumnal Catarrh:—

RECRUITING RENDEZVOUS, U. S. A.,
PROVIDENCE, R. I., December 22, 1872.

DR. MORRILL, WYMAN, Cambridge, Mass.

Dear Sir,—In your work on Autumnal Catarrh, which I have read with interest, having been a victim of that curse for upwards of thirty years,—all my life, in fact,—you state that its geographical distribution is not yet sufficiently determined for want of sufficient data.

This is my experience. Up to 1852 I had the disease every autumn with regularity in New Hampshire—my native State.

In 1852 I was at sea, and on the coast of Labrador until September 1st, and had no sign of it until returning to New Hampshire in September.

In 1853–4–5 I was in Tennessee during the critical period, and suffered, but not with such severity as in New Hampshire.

In 1856 I was in Sibley County, Minn., and did not escape it.

In 1857 I was in St. Louis, Mo., and it found me out there.

In 1858–59–60 I was in western Texas, in San Antonio, and the country northwest, a high and dry region. Here I escaped entirely without even a symptom.

In 1861 I was traveling horseback from San Antonio, Texas, to Kansas, thence by rail to New Hampshire, arriving in September, and leaving New Hampshire for Washington on September 27th.

The catarrh seized me on arriving in New Hampshire, and left me when I got to Washington, about October 1st.

In 1862 I was at St. Augustine, Florida, and escaped.

In 1865 I was at Beaufort, S. C., and had no sign of it.

In 1864 I was in front of Richmond, Va., and again escaped it.

In 1865 I was at Raleigh, N. C., until September 11th, and it did not attack me. Coming to New Hampshire the last of September, I had it in full force.

In 1866 I had it very badly at Camden, south Arkansas.

In 1867, at Little Rock, Ark., I suffered very severely.

In 1868, again at Camden, and Washington, in south Arkansas, it assaulted me with great fierceness.

In 1869 I had it again at Little Rock, Ark.

In 1870 I was in New Orleans, La., up to September 18th, when the whole garrison was sent to Ship Island, twelve miles off the Mississippi coast in the Gulf. I had it slightly in New Orleans, and not at all at Ship Island.

In 1871, at Milwaukee, Wis., it came upon me very severely.

In 1872, at Providence, R. I., it seems to me I had it worse than ever before.

I was a land surveyor up to 1861; since then a soldier. The above dates I verify by my diary. If the information is of any service to you, I shall be gratified.

I am very respectfully,

Your obdt. servant,

GEO. F. TOWLE,
Bvt. Lt. Col. U. S. Army.

P. S. — In my opinion, *frost* alone does not terminate it, for I noticed in Arkansas it left me long before any frost came.

W. D. WINSOR, ESQ., PHILADELPHIA.

I was born in Boston, and am now thirty-eight years old. At the time of my first attack of Autumnal Catarrh, or Hay Fever, I was ten years old, and living at the time at West Newton, Mass. The attack was a very severe one. From this time till I was about eighteen, I lived in the vicinity of Boston, and then came to Philadelphia, where I am still living.

The attack commences on August 20th, almost to a day, — though some years a few days sooner or later, — and formerly lasted till the first heavy frost. The first symptoms are severe itching of the eyes

and nose and mouth, accompanied by violent sneezing, sometimes twenty times in succession. The nostrils and throat are stopped up, and severe pain in the forehead. There is a very profuse discharge from the nose, at times water running from the nose on inclining the head. Considerable fever accompanies the attack. I frequently use twelve or fifteen handkerchiefs in a day. The inflammation extends to the throat and passages to the ears, causing intense itching and partial deafness, and on awakening in the morning the mouth and throat are dry and much coated. The whole skin, and particularly the face and scalp, is in a very irritable condition, and a touch from an insect or particle of dust on the face, or of a hair-brush on the head, brings on an attack of sneezing. Sudden change from the house to the open air and sunlight, produces the same result. The eyes are much inflamed and running. I am generally better in a cloudy and damp day, unless in the asthma stage of the disease. I am utterly incapacitated for business.

These symptoms continue for about three weeks, gradually increasing in violence, when the disease assumes the asthmatic form, from which I suffer intensely, both day and night. I cannot lie down at night, but am obliged to sit up, with my head resting on a chair in front, and thus get a little sleep in the intervals between the paroxysms. I am rapidly weakened and confined entirely to the house, and even to my room. This stage generally lasts about three weeks, and then the disease breaks up in the form of a severe cough, which tears and racks my lungs — this produces at first but a little ropy phlegm — but later, I throw off large quantities of a thick hard mucus, sometimes tinged with blood. These coughing fits are very long and exhausting. On two occasions I have had inflammation of the lungs. After the first heavy frost, I gradually recover, but it takes a long time to regain my strength.

Of late years the disease seems to have lost its character of progressing in regular stages — attacking first head, then throat and lungs, with asthma, and breaking up with a cough. I am much more subject to asthma which comes on within ten days after the attack commences, and continues through the whole, and the disease lasts much longer, sometimes even into the first part of the winter. The change from Boston to Philadelphia had no effect on it.

I have been under treatment of many doctors, both in New England and Pennsylvania, and taken all kinds of remedies, but never experienced any diminution of the disease, and have only derived benefit in the form of alleviation for the time, during a severe attack of asthma. Before the disease was understood, and its recurrence each year noted, and even after, it was considered as a severe

cold to be broken up, and I have taken vast quantities of all kinds of medicine, and have been blistered, cupped, and bled, and had ice bags applied to the spine. Lately I have taken no medicines, and have found relief in attacks of asthma from Belladonna plasters, subcutaneous injections of morphia and stramonium cigarettes, which I consider the greatest blessing. One of the worst attacks I ever had was in the Broad Top Mountain region in Pennsylvania, on the border of Maryland. I am generally better in the city than the country.

In 1869 I went to Fire Island, where I passed a month. Here I found only partial relief. When the wind was from the sea, I was somewhat relieved, but a land breeze of two hours brought back all my troubles. On returning to Philadelphia the disease returned in full force.

In 1870 I went to Jefferson, in the White Mountains. I did not start till after the disease commenced, and traveled by sea to Boston. The journey in the cars from Boston to Jefferson rapidly increased all the symptoms. I arrived at Jefferson with a severe attack of asthma, and could not walk without assistance. Within three days the attack was passing off, and in a week I was able to walk five miles. I remained at Jefferson till about October 5th, perfectly well, and leaving there in the morning reached Boston, and awoke the next morning with an attack of asthma.

In 1871, again at Jefferson, and perfectly free from the disease the whole time I remained.

In 1872, again at Jefferson, and perfectly well, after remaining some three weeks. I went into Maine, and camped on the Richardson Lakes, and continued perfectly free.

In 1873 I left Philadelphia with the attack fully developed, and traveled to River du Loup, N. B., suffering much on the way. Within three days after reaching New Brunswick, the disease left me, and I passed three weeks camping out in the woods perfectly well.

I returned by way of Quebec and Montreal, and from there to Richardson Lakes, in Maine, where I stayed ten days, continuing free from the disease.

W. D. WINSOR.

August 17, 1872.

The following letter gives a full account of an asthmatic form of the disease, in which the catarrhal symptoms play a subordinate part.

LOUISVILLE, Ky., July 20, 1876.

DR. MORRILL WYMAN :—

Dear Sir, — I have read with interest your work on “Autumnal Catarrh,” and supposing you still desire facts in regard to it, send you a report of my case.

I am thirty-six years old, a lawyer, leading a sedentary life. My father has an asthmatic tendency — his mother had also. I have suffered from annual attacks for twenty-two years. My first attack was while attending a country school in 1849, when, a rain-storm coming up on my way home, my sufferings for that afternoon and night were very severe. The asthmatic part of the disease in my case is more aggravated than any described in your work. I was taken in Green County, Ky., eighty miles south of this place, the first week in August, and afterwards it returned with regularity about the 12th of August each year. Previous to that time, however, I have a very sensitive feeling about the eyes and nose, and sneeze easily and often, am easily depressed, with nervous symptoms.

1st. I usually feel some symptoms in June, about the middle of the month — when those who have “Rose Cold” are suffering from that disease. At this time my eyes itch, and my nose is very sensitive, frequent sneezing, and there is some discharges — indeed, all the symptoms of the earlier stages of “Hay Asthma,” in a milder form. This continues for about ten days and passes off.

From that time I am usually free from any symptoms, except a little more sensitiveness to dust, etc., than other persons, until the 12th of August each year, when in Kentucky.

2d. Then I feel all the same symptoms in a more aggravated form, beginning with itching eyes, sensitiveness of the nose, sneezing and discharges at the nose, at first so much like a severe cold that I hope it is only a cold, but all these symptoms grow more aggravated about the 1st of September, and then, or soon afterwards, I begin to feel decided asthma — when coughing begins, thence the asthma increases, and I forget the symptoms named while the severity of the asthma continues — usually about three weeks. As it grows cooler the asthma diminishes until the preliminary symptoms again appear, but not in so severe a form. These remain until we have had two to four frosts and the cool bracing fall weather comes on, when I get on with now and then an attack of coughing, sneezing, or asthma, but am able to attend to routine business, requiring only

small mental or physical effort. These things diminish in force, and frequency during latter part of October, November, December, January, February, and March, and I am not altogether free from them until the spring. In spring and summer, with the exception stated in June, I am free from the disease, unless I take a severe cold, when it often takes an asthmatic turn, but does not affect me much more than colds do others.

These statements are made upon the idea that I remain in this latitude, but apply in a modified form when I do not. I was in Cleveland, Ohio, for three successive seasons, and there I was invariably attacked with first decided symptoms on 18th of August, and the cool weather coming on earlier began to overcome the attack about a week earlier than in Kentucky.

Previous to entering the Union army in 1861, I do not remember having escaped the disease but twice — once when camping out at a mineral spring, hunting, fishing, and leading an outdoor life, and again after taking a bath in Green River every morning until October.

In August and September, 1862, I was with my regiment in Buell's army where we made forced marches through Tennessee and Kentucky in pursuit of the Rebel General Bragg. Although surrounded by clouds of dust, I was able to perform all my duties as regimental commander, and slept without shelter nearly every night.

I attribute the partial exemption of this and the following year to intense mental excitement caused by the incidents of the war, and my surroundings.

In 1864 I was with Sherman before Atlanta, Ga., — remained until the fate of the place was decided — but after the excitement had passed away asthma came on in force, and I had to get leave of absence and come to Louisville, where I had a regular attack.

In 1866 I tried Marquette, Mich., with good success, having only a slight catarrh for a short time. Returned to same place in 1867, with same result, but suffered both times from coming home too soon.

In 1868 I went to the Water Cure in Cleveland, Ohio — tried Turkish and tonic baths, which greatly modified the attack. Had a similar experience the next year; but the third year the treatment seemed to be losing its effect, except that it left me stronger for the remainder of the year. I had one attack of asthma relieved while there, by what appeared heroic treatment, but the result was good. I was put in the Turkish bath thirty minutes with room heated to 135° F., followed by warm, then cold douches, and finally an ice cold shallow bath.

In 1871 I tried the St. Lawrence River trip, went to Montreal and

Quebec, and reached the White Mountains about the 10th of August, very well, but in passing through a fog at Island Pond, before reaching Gorham, and in the night began to feel decided asthmatic symptoms. We ascended Mt. Washington the next day, the symptoms disappearing as we ascended, but a heavy fog, evening and morning, brought them back again. We hurried down and to Boston, thence to the island of Nantucket. I soon recuperated there, and could be out in the heaviest fogs without inconvenience, but after the catarrh came on I did not seem to be invigorated by the sea air; this about the 18th of September. I remained on the island about two weeks later, but finding no relief went to New York; thence up the Hudson to Albany and to Lake George, where I seemed to become a new man under the influence of the lake air. The change was almost instantaneous, my breathing tubes were free, head clear, and shoulders erect. We spent several days on Lakes George and Champlain, during which neither fatigue, night nor morning air had any bad effect.

In 1872 I went to Europe, was in London about the 7th of August; the climate affected me very much as the White Mountains had done, and I had to hasten to the Continent to escape the threatened attack. During a tour through Belgium, Switzerland, Germany, France, and England again later in the season, I was perfectly well. And yet in returning from New York, as late as the 15th of October, I felt a strong asthmatic tendency, from which I suffered for a week or two. I think now I must always experience some difficulty in returning home after two months' exile.

There are fifteen or twenty cases of the disease in this city, and some who have "Rose Cold."

Do you think there is a tendency in the disease to extend over its regular time, and become a constant attendant during all the year?

I think you will find it wherever luxuriant vegetation extends. If the weed known as "rag weed" does not cause it, it is certainly a great aggravator of the disease.

Pardon this long letter; I hope the facts will be of some use to you.

Respectfully, yours, etc.,

J. H. WARD.

HEIGHTS OF VILLAGES AND HOTELS.

Taken principally from "Appalachian Mountain System," by Professor Arnold Guyot, New Haven, 1861, and "Gazetteer of New York," by J. H. French.

Those marked with * are places at which subjects of Autumnal Catarrh have escaped an attack.

The heights are given in English feet, above mean tide water. They are all reduced to the ground, or, for the rivers, to the level of the water.

CULMINATING REGION OF THE NORTHERN SECTION.

WHITE MOUNTAINS AND VICINITY.

Western Slope, — Valley of the Ammonoosuc.

Connecticut Lake	1,616
Connecticut River junction with Wells River . .	407
Bath Village	521
Lisbon Village	577
Littleton, Railroad Station	817
*Whitefield, summit between Littleton and Lancaster	1,057
*Whitefield Village	957
*Waumbec House	1,248
Lancaster Village	860
Israel River, Lancaster Bridge, St. Lawrence and Atlantic Railroad	849
*Bethlehem Village	1,450
*Carrol House	1,428
*Bethlehem Bridge on the Ammonoosuc	1,221
*Brabrook's Hotel	1,551
*Fabyan's Hotel (old house, now burnt) . . .	1,583
Door of Lancaster Court House	864
*Crawford Hotel (Crawford House), White Mountain Notch	1,903-1,920
*White Mountain House	1,568
*Tilton	1446

*Franconia Village, Iron Foundry	921
*Gilmanton Hill, summit between Franconia and Littleton	1,329
Dalton, Sumner House (Piazza)	653
Dalton Post Office	910
*Franconia Valley, crossing of road to Bethlehem	979
*Franconia Notch, Profile House	1,974
*Franconia Notch, height of land towards Franconia	2,014
*Echo Lake	1,926
*Cherry Mountain, Summit Road	2,192
*Cabin, foot of Lafayette Mountain	1,780
*Flume House, road front of the Hotel	1,431
Thornton, road opposite the Post-office	1,223
Plymouth Railroad Station	473

Eastern Slope — Valley of the Saco.

*Notch of White Mountains; Crawford House	1,903-1,920
South end of Gate of Notch	1,823
*The Notch	1,904
*Wiley House, road opposite the hotel	1,335
*Old Crawford's, or Davis's Hotel	986
Hart's Location, Farm junction Sawyer's River	880
Upper Bartlett Post-office	644-664
South Conway Post-office	450
Wiley House	1,327
North Conway Railroad Station	525
Bethel	700

Valleys of Ellis and Sawyer's River.

Jackson Village, hotel foot of the Falls	771
*Pinkham Notch, summit near Glen Ellis Falls	2,018
*Junction of Carrigain's Brook and Sawyer's River	1,494

Northern Slope.

*Mount Washington, spirit level, 6,285, 6,293; barometer, 6,291.7; average	6,289
*Gorham, N. H., Railroad Station, St. Lawrence & Atlantic Railroad, Alpine House	802
*Randolph Hill	1,400
*Glen House	1,632

*Bowman's Place, Summit Road, between Moose and Israel Rivers, Siwooganock	1,446
*Lowest Summit, Railroad Summit, between Moose and Israel Rivers	1,473

GROUP OF FRANCONIA MOUNTAINS.

Highest farm foot of Moose Hillock, south	1,681
Concord, N. H., Railroad Station	237
Lake Winnepiseogee; mean level of the interior valleys of New Hampshire	501
Conway Intervale, Saco Valley	471
Kearsarge House	517
*George A. Hodgdon's farm-house	1,255-1,293
Summit of Randolph Hill at Kelsey's	1,430-1,457
Randolph Heading, Robert Leighton	1,717
Senter House at Centre Harbor, Lake Winnepise- ogee	553
*North Wakefield, Railroad summit	700

GREEN MOUNTAINS.

*Manchester Railroad Station	713
*Manchester Village Court-house	864
Rutland Railroad Station	530
Waterbury Railroad Station	425
Mount Mansfield, the Chin	4,279
*Mansfield Mountain House	4,000
*Stow Village, foot of Mount Mansfield	700
Williamstown, Vt.	1,590
Craftsbury, Vt.	1,158
Berkshire Hills, Mass.	1,500
Pass of Berkshire Hills. (Lowest Pass to Hudson River)	1,440
Stockbridge, Mass.	1,400
*Mount Tom, Connecticut River	1,214
Williamstown College	980
Eastern hills of Massachusetts. Average of high- est range east of Connecticut	1,000
Worcester. Average of eastern Massachusetts	536
Watertown, above dam, above mean tides, Boston	44

Grand Monadnock by barometer 3169.37
 Grand Monadnock by triangulation 3185 2600 ft. Survey

EAST OF WHITE MOUNTAINS.

*Houlton, general level, inland	620
*Fort Fairfield, Valley of St. John River	415
*Port Kent, Valley of Aroostook River	575
*Moosehead Lake, Interior Valley	1,000
*Mount Pleasant, Bridgeton, Me.	2,018

PLATEAU AND MOUNTAINS OF ADIRONDAC.

Lake Champlain, mean level	93
Crown Point Tavern	206
Bradford farm, road summit	695
*Amyhill summit road	844
*Buckhollow Hamlet, water of Putnam Creek	719
*Penfield, water of Putnam Creek	910
*Hammond's Furnace	1,132
*Paradox Creek, Hammond's saw-mill	911
*Sturtevant's Mill, Mud Creek	1,113
*French's farm, road before	1,962
*Grand Boreas River, bridge	1,736
*Adirondac Village, or McIntyre's Iron Works hotel	1,785
*Lake Colden	2,786
*Paul Smith's house	2,200

NEW YORK AND OHIO PLATEAU.

Mean altitude of the Plateau	2,000
Mean altitude of Valleys	1,500
*Catskill Mountain	3,432
*Catskill Mountain House, above Hudson River	3,212
*Cazenovia, Madison County	1,260
*Peterborough, Smithfield, Madison County	1,200
*Madison County	1,400-2,000
*Madison County Valley	900-1,200
*Courtland County, northern part a high plateau	1,100-1,200
*Courtland County Hills	1,600-2,100
*Horner	1,500
*Preble	1,700
*Solon	1,400
*Virgil	1,600
*Chemung County	1,300-1,500

*Steuben County	2,500
*Corning	928
*Bath	1,090
*Arkport	963
*Alleghany County	2,000-2,500
*Alleghany County Valleys	1,500-1,700
*Angelica	1,430
*Wellsville	1,480
*Little Genesee	1,500
*Cattaraugus County, summits	2,500-3,000
*Cattaraugus County, valleys	1,200-1,700
*Olean	1,280
*Franklin	1,580
*Ellicottville	1,283
*Chataqua County	1,300
*Charlotte, Carroll, Busti, Arkwright	1,500
*Ellery, Gerry, and Harmony	1,400
*Island of Mackinaw, between Lake Huron and Lake Michigan	728
*Pottersville, near Schroon Lake	600 ?

ALLEGHANY MOUNTAINS.

Frostburg, Maryland	1,050
*West Point	1,160
Meadville, Pennsylvania	1,088
*Altamont, B. & O. R. R.	2,700
*Oakland, Maryland	1,550

VIRGINIA.

Wytheville	2,287
Wordensville	1,720
Craftsbury	1,100
West Rupert	750
Meadow Dale	1,800

GREAT LAKES.

Lake Superior	641
Lake Huron	596
Lake Michigan	583-600
Lake Erie	565
Lake Ontario	231

MISSISSIPPI RIVER.

St. Louis, Missouri	481
*Muscatine, Iowa (Smith's Inst.)	586
*St. Paul, Minnesota (Fort Snelling)	820
Milwaukee, Wis.	593
Beloit, Wis.	750
Mississippi River at St. Louis	381
Cincinnati, Ohio River, low water (Humphrys & Abbott)	492
Ohio, Highland Co., average	1,050
“ Brush Creek township	1,200-1,300
“ Brush Creek township, valleys about	1,000

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